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AN ACCOUNT OF A LITTLE-KNOWN ERANIAN DIALECT.

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INTRODUCTION.

Ōrmuṛī or Bargistā is the language of a tribe which calls itself Barakī; but which its neighbours call Ōrmuṛ. Similarly, they themselves call their language Bargistā, while among others it is commonly known as Ōrmuṛī. According to Ghulām Muḥammad Khān,[1] the Barakīs claim to be Sayyids, and to be descended from one Mīr Barak. They are said to have come to their present habitats at some unknown time from Ērān, and to have settled first in the Lōgar valley, south of Kābul, and subsequently also at Kānīguram in Wazīristān where they now have some four or five hundred houses. When the Afγāns conquered the country, the Ōrmuṛs took to trading, and in pursuit of their calling wandered far and wide. There are thus at the present day a few villages of them in the Pēšāwar district, but here they have abandoned their language and talk Pa̱štō. In some villages of the Lōgar valley they speak Persian, while in a few other villages of the same locality—Leech mentions the village of Barak—they have retained their own form of speech, which is also spoken in Kānīguram.

The above is the account given by Ghulām Muḥammad Khān. Two earlier writers agree on the whole with what he says, but state that the tribe is of Arab origin. Lieutenant R. Leech (J.A.S.B., vii, 1838, pp. 727 ff) gives a short vocabulary and a few phrases of the language, and remarks as follows :—

> 'The Barakîs are included in the general term of Parsîwàn or Tàjak; they are original inhabitants of *Yemen* whence they were brought by *Sultán Mahmúd* of *Ghazni*; they accompanied him in his invasion of India, and were pre-eminently instrumental in the abstraction of the gates of *Somnath*. There are two divisions of the tribe. The Barakîs of Ràjàn in the province of *Lohgad*, who speak Persian, and the Barakîs of *Barak*, a city near the former, who speak the language called Barakî; *Sultán Mahmúd*, pleased with their services in India, was determined to recompense them by giving them in perpetual grant any part of the country they chose; they fixed upon the district of *Kànìguram* in the country of the Wazìrìs, where they settled. * * * * * * * The Barakîs of this place, and of *Barak* alone speak the Barakî language.
>
> We receive a warning from the study of this Vocabulary, not to be hasty in referring the origin of a people merely from the construction of their language; for it is well known that the one now instanced was invented by *Mir Yúzúf* who led the first Barakîs from *Yemen* into Afghanisthan; his design was to conceal

[1] See pp. 5, 6 of his Grammar.

and separate his few followers from the mass of Afghans (called by them Kásh) who would no doubt at first look upon the Barakîs with jealousy as intruders. The muleteers of *Cabúl*, being led by their profession to traverse wild countries and unsafe roads, have also invented a vocabulary of pass-words.'

Major H. G. Raverty (J.A.S.B., xxxiii, 1864, pp. 267ff.) also gives a short list of 'Bárakai' words, and adds:—

"The Bárakais, who are not Afgháns, are included among the people termed Tájíks (supposed to be of Arab descent,) dwell at, and round about, Kánígoram, * * * and about Bárak in the province of Loghar, and But-khák on the road between Jalálábád and Kábul, south of the river of that name."

The following account of the language is principally based on a book written in 1886 by Ghulām Muḥammad Khān, District Inspector of Schools, Dera Ismail Khan, at the request of Major Macaulay, who was Political Officer with the Punitive Force that entered Wazīristān in the year 1881. It is entitled *Qawāid-ĕ-Bargistā*, and is written partly in Urdū, and partly in Pᵃṣtō. It is a very full and carefully written work, containing a grammar, a vocabulary, and a collection of short sentences and stories in Ōrmuṛī. Unfortunately, owing to its being printed in the Persian character, the vocalization of many Ōrmuṛī words has been left doubtful, and this I have endeavoured to remedy so far as was possible by reference to other authorities. These are the manuscript materials collected for the Linguistic Survey of India, and, especially, a valuable transcription into the Roman character of Ghulām Muḥammad Khān's list of Ōrmuṛī verbs, kindly placed at my disposal by Mr. Longworth Dames. When all other sources failed, I consulted the local authorities in Wazīristān, and I am indebted to Sir John Donald, K.C.I.E., the Resident, for much kind help ungrudgingly rendered in the midst of his multifarious duties.

From the above materials, I have prepared a full grammar and vocabulary of the language for the appropriate volume of the Linguistic Survey. In these I attempted to show only the facts of the language, so as to give a purely practical account to those who wished to make a study of it for administrative purposes.

The present work has a different object. Here, it has been my endeavour to treat this interesting and little-known language from the point of view of comparative philology, and to ascertain its relationship to the other members of the Eranian family. Considerations of space, and also the desire to prevent leading facts from becoming obscured under a mass of details, have prevented the account of the grammar in the following pages from being nearly so complete as that which will be published in the Linguistic Survey, but I hope that I have not omitted any fact that is of importance for the object in view.

I must here acknowledge my indebtedness to P. Horn's *Grundriss der neupersischen Etymologie*, to Professor W. Geiger's works on P^{a}štō and Balōcī, and to the sections of the *Grundriss der iranischen Philologie* that come from the pens of these eminent scholars. The amount of my indebtedness is shown by every page of my vocabulary, and without their help I could never have attempted the present work.

In spite of the warning conveyed by Leech in the last paragraph of the passage quoted above, I think that I have been able to show that Ōrmuṛī, while it has in some respects developed on independent lines, is in the main a close relation of the languages and dialects of Western Ērān. It is particularly interesting as retaining almost unchanged the one Medic word—σπάκα—quoted by Herodotus,—a word which has suffered much wear and tear in every other Eranian language. It is interesting, too, that in some respects Ōrmuṛī shows remarkable points of agreement with the Piśāca languages of our Indian North-West Frontier. May we assume from this that the Piśāca languages once occupied an area much wider than their present habitat, and that Ōrmuṛī absorbed these peculiarities after the arrival of its speakers in what is now Af$_{\gamma}$ānistān, but before the Af$_{\gamma}$ān conquest ?

This is not the place in which to raise questions of ethnology ; but the facts regarding the relationship of Ōrmuṛī to other Eranian languages suggests an interesting field of investigation to students of that science. Ōrmuṛī is an isolated West Eranian language, spoken by a small tribe in the heart of the Af$_{\gamma}$ān country, with the speech of which it has only the most distant connexion. It is a veritable fly in amber, and, though Ōrmuṛs may be neither rich nor rare, we are still entitled to

'wonder how the devil they got there.'

The first two notices of Ōrmuṛī and the Ōrmuṛs appeared, as we have seen, in the pages of the Journal of the Asiatic Society of Bengal. The Linguistic Survey of India, 'the onlie begetter of these insuing' pages, owes much to the same Society for the encouragement accorded to its conception, and for advice and guidance freely given to it in its earlier years. It is therefore with peculiar satisfaction that I see this investigation published as one of the Memoirs of the body with which it has been my pride to be associated for now just forty years.

George A. Grierson.

ABBREVIATIONS USED IN THE FOLLOWING PAGES.

N.B.—*Abbreviations of adjectives may also be used as abbreviations of the corresponding adverbs.*

abl. = ablative.
acc. = accusative.
adj. = adjective.
an. = animate.
aor. = aorist.
Ar. = Arabic.
Av. = Avesta.

Bal. = Balōcī. (Northern dialect, unless otherwise stated).
Bš. = Bašgalī.

card. = cardinal.
com. gen. = common gender.

dat. = dative.

EB. = *Etymologie des Balūčī*, by W. Geiger.
ELA. = *Etymologie und Lautlehre des Afghānischen*, by W. Geiger.
E. Oss. = East Ossete.

f. *or* fem. = feminine.

G. = Gābrī.
gen. = gender.
GIP. = *Grundriss der iranischen Philologie*, edited by W. Geiger and E. Kuhn.
Gl. = Gīlānī.

H. = *Grundriss der neupersischen Etymologie*, by P. Horn.
Hn. = Hindī.

inan. = inanimate.
indef. = indefinite.
interj. = interjection.
interrog. = interrogative.

Khō. = Khōwār.
Kl. = Kalāšā.
Kš. = Kāšānī.
Kšm. = Kāšmīrī.
Kurd. = Kurdish.

L. = Lahndā.
LB. = *Lautlehre des Balōčī*, by W. Geiger.
loc. = locative.

M. = Munjānī.
m. *or* masc. = masculine.
My. = Maiyā.

Nāy. = Nāyīnī.
N. Bal. = North Balōcī.
nom. = nominative.

Ō. = Ōrmuṛī.
obl. = oblique.
O. Prs. = Old Persian.
ord. = ordinal.
Oss. = Ossete.

P. = P^{a}štō.
Pām. dial. = Pāmīr dialects.
pers. = person.
Phl. = Pahlavi.
Pn. = Panjābī.

pl. = plural.
postpos. = postposition.
p.p. = past participle.
p.p.f. = past participle feminine.
prep. = preposition.
pron. = pronoun.
pron. suff. = pronominal suffix.
Prs. = Persian.
Pš. = Pišāca.

S. Bal. = South Balōcī.
sg. = singular.
Skr. = Sanskrit.
Sm. = Samnānī.
Sn. = Sindhī.

Sng. = Sanglīcī.
Sq. = Sarīqōlī.

Š. = Šiɣnī.
Šṇ. = Šiṇā.

T. = Tāliš.

V. = Veron.

W. = Waχī.
Wai. = Wai-alā.

Yd. = Yüdɣā.
Ynb. = Yaɣnōbī.

SYSTEM OF TRANSLITERATION ADOPTED IN THIS WORK.

As a uniform system of transliteration, which can be employed both for Eranian and for Indo-Aryan languages, has to be adopted, I follow in the main that used in the Index of the *Grundriss der iranischen Philologie*, Vol. I. It will be observed that the transliteration of the Nāgarī alphabet necessarily differs in some respects from that usually followed in India.

The following is the transliteration adopted for the Perso-Arabic alphabet as employed for Ōrmuṛī, as well as for other Eranian languages.

ا	*alif*.	ژ	*ž*.
ب	*b*.	ص	*ṣ*.
پ	*p*.	ض	*ẓ*.
ت	*t*.	ط	*ṭ*.
ټ	*ṭ*.	ظ	*ẓ*.
ث	*ṣ*.	ع	‘.
څ	*ṣ*.	غ	*γ*.
ج	*j*.	ف	*f*.
چ	*c*.	ق	*q*.
ح	*ḥ*.	ک	*k*.
خ	*x*.	گ	*g*.
د	*d*.	ل	*l*.
ډ	*ḍ*.	م	*m*.
ذ	*δ*.	ن	*n* or ˜ when representing *nūn γunna*.
ر	*r*.		
ړ	*ṛ*.	نړ or ڼ	*ṇ*.
ز	*z*.	و	*v, w, ō, ū*.
ځ	*dz*.	ه	*h*.
ږ	*ž*.	ي	*y, ē, ī*.
ږ	*ẓ*.	ـَ	*a*.
س	*s*.	ـِ	*i, ë*.
ش	*š*.	ـُ	*u*.
ښ	*ṣ*.		

Wāw-ĕ-ma‘dūla is indicated by a small ^{w} above the line, as in Prs. *χ^{w}ud*, self; Ō. *χ^{w}ura*, he may eat.

System of transliteration employed for representing the Avesta alphabet.

a, ā, e, ē, ə, ə̄, o, ō, å̊, ã, i, ī, u, ū.—k, g, χ, γ, c, j, t, d, θ, δ, ṯ, ṗ, b, f, w, ṅ, n, m, y, v, w, r, s, z, š, ž, h, χv.

System of transliteration employed for representing the Old Persian alphabet.

ă, ĭ, ŭ—ka, ku, ga, gu, χa, ca, ja, ji, ta, tu, da, di, du, θa, ϕa, ba, ϑa, na, nu, ma, mi, mu, ya, va, vi, ra, ru, la, sa, za, ša, θra, ha.

System of transliteration employed for representing the Nāgarī alphabet.

a, ā, i, ī, u, ū, ṛ, ṝ, ḷ, ḹ, ē, ai, ō, au.

ṁ, ḥ.

ka	*k'a*	*ga*	*g'a*	*ṅa*		
ca	*c'a*	*ja*	*j'a*	*ña*		
ṭa	*ṭ'a*	*ḍa*	*ḍ'a*	*ṇa*	(*ṛa*	*ṛ'a*)
ta	*t'a*	*da*	*d'a*	*na*		
pa	*p'a*	*ba*	*b'a*	*ma*		
ya	*ra*	*la*	*va* (or *wa*)			
ša	*ṣa*	*sa*	*ha.*			

PHONETICS.

§ 1. ŌRMURĪ SOUNDS.

The sounds of Ōrmuṛī are the same as those of Pᵃšṭō, with one in addition. In the present paper they are indicated as follows: Ōrmuṛī has no written character of its own.[1]

A. Vowels.

ᵃ, *a*, *ā*, *i*, *ī*, *u*, *ū*, *ē*, *ai*, *ō*.

B. Semivowels.

y, *v* (*w*).

C. Consonants.

	Mutes.		Spirants.		Nasals.	Liquids.
	Surd.	Sonant.	Surd.	Sonant.		
Gutturals	*k*	*g*	χ, *h*	γ		
Palatals	*c*	*j*	*š*	(*ž*), *ẓ*		
Fricatives	*ʦ*	*ʣ*				
Dentals	*t*	*d*	*s*	*z*	*n*	*r*, *l*
Cerebrals	(*ṭ*)	(*ḍ*)	*ṣ*, *ṣ̌*		*ṇ*	*ṛ*
Labials	*p*	*b*			*m*	

Remarks:—

1. Owing to the fact that nearly all the Ōrmuṛī words quoted in these pages were originally written in the Persian character, the statements made in them regarding vowels must be read with a certain amount of reserve.

In the first place, the vowel ᵃ, which is properly written ◌ᵉ in the Persian character, is often written ◌ or ◌ᵉ, thus giving rise to considerable confusion.

In the second place, Ghulām Muḥammad Khān, the author of the book on which my inquiries are mainly founded, was far from consistent in his representation of the

[1] In this section, I have followed the arrangement adopted by Professor Geiger in his *Lautlehre des Balūčī*.

ma'rūf and *majhūl* vowels. I have made local enquiries, and have done my best to give the correct sounds, but it must be borne in mind that it is possible that *ī* should sometimes be *ē*, and that *ū* should sometimes be *ō*, and vice versa.

2. The vowel ᵃ is the well-known *fatḥā-ĕ-Afγānī*. It is the shortest possible sound of *a*, and is described as nearly mute (*sākin*). The diphthong *ai* has been noted only as a termination of masculine nouns, and is borrowed from Pᵃṣtō. I have nowhere noted the occurrence of the diphthong *au*.

3. The sound *ṣ̌* is that of the Pᵃṣtō ښ. Ghulām Muḥammad Khān says that it is sounded as in south-western Pᵃṣtō, and is a compound of *χ* and *š*. As in Pᵃṣtō, it is a cerebral letter. But in Ōrmuṛī it is freely interchanged with the palatal *š*, and I therefore consider it together with that letter in § 28, below. The letter *ṣ̌* naturally follows suit, and is considered in § 29. The sound of *ṣ̌* is peculiar to Ōrmuṛī. According to Ghulām Muḥammad Khān, it is a compound of *χ*, *ṣ̌* and *r*. European informants tell me that it is impossible to represent the sound in writing, and, as a matter of fact, various persons transliterate it by widely different methods. Ghulām Muḥammad Khān represents it in the Persian character by the special sign ښ۫ر. The letter *ž̌* is the Pᵃṣtō ژ. In Ōrmuṛī it is pronounced exactly like the Persian *ž*, and I have retained it only for purposes of derivation. The letter *ž* itself occurs only in words borrowed directly or indirectly from Persian.

4. The fricatives *ʦ* and *ʣ* are the sounds represented by the Pᵃṣtō څ and ځ. They are sounded nearly like the English *ts* and *dz*.

5. The cerebral *ṭ* and *ḍ* occur only in words borrowed from Indian languages or in words of purely Indian derivation. The cerebral *ṇ* and *ṛ* are pronounced as in Pᵃṣtō. The *ṇ* is sounded like *ⁿṛ*, and is often so written. Thus *hiṇs* or *hīṛs*, a bear.

6. The other sounds call for no remarks here.

I. VOWELS.

§ 2. ᵃ.

This vowel occurs only as a medial or as a final. It is never initial. The materials for its discussion are incomplete, because, in the Persian character, it is often written as *i* or *u*. See § 1, Remark 1. In the following cases it appears written as ᵃ in Ghulām Muḥāmmad Khān's grammar :—

(1) As a medial letter it represents an original *a*, as in Av. *χšvaš*, Ō. *ṣ̌ᵃh*, six; Av. *maχši-*, Ō. *mᵃṣ̌ī*, a fly. Sometimes it acts as a *svarabhakti* vowel, as in Ō. *wᵃrī*, he takes, from *wri-yōk* to take (Av. √*bar-*).

(2) As a final vowel, it represents an original *ā* in the termination of feminine nouns, adjectives, and participles. It also appears in Ō. *ʦᵃ*, what ? which corresponds to the O. Prs., Av., and Skr. pronominal base *ci-*.

§ 3. *a*.

(1) *a* = original *a*. Thus :—

(*a*) Initial :—Av. *aštadasa*, Ō. *aštēs*; Av. *azəm*, Ō. *az*.

(*b*) Medial :—Av. *navaiti-*, Ō. *nawī*; Av. √*pac-*, Ō. √*paχ-*; Av. *paršti-*, Ō. *pat*;

Av. *sarəδa-*, Ō. *sal*; Av. *sarah-*, Ō. *sar*; O. Prs. √*tras-*, Ō. √*tra-* (*trayēk*); Skr. √*yas-*, Ō. √*yas-*.

(2) We have *a* for original *ā* in Skr. *ā* + √*gam-*, Ō. *aγ-ōk*; O. Prs. *ā* + √*stā-*, Ō. √*ašt-*. Perhaps, also, Ō. √*amar-*, cf. P. √*āwr-*, to hear.

(3) We have *a* for original *i* in Skr. √*riš-*, Ō. √*ras-*, and in various forms of the prepositions *ni*, *nis*, as in Skr. *ni* + √*sad-*, Ō. √*nas-t-*; Av. *nis* + √*bar-*, Ō. √*naw^{a}l-*; Skr. *nis* + √*gam-*, Ō. *naγ-ōk*. But, in Skr. *nis* + *sarati*, Ō. *nisī*, the *i* is retained.

(4) *a* represents an original *u* in two words, in each case being preceded by a guttural letter. Skr. *gup'ati*, Ō. *γafī*; Av. *sukurəna-*, Ō. *sukal*. Similarly, *ū* after a guttural is represented by *a* in Skr. *g'ūrṇati*, Ō. *galī*.

(5) A final *ē* preceded by a guttural is weakened to *a* in Av. *hē*, Ō. *a*, the oblique suffix of the pronoun of the third person singular.

(6) In Av. *paiti-*, *ai-i* in crasis have been weakened to *a* in Av. *paiti* + √*zan-*, Ō. √*pazan-*, recognize. Similarly, Av. *pairi-* becomes *par*, *pra*, or *pr*.

(7) Aphæresis of original *a* occurs in Av. *ahmi*, Skr. *asmi*, Ō. *h^{a}m*, I am: O. Prs. *amāχam*, Ō. *māχ*, we, us; Av. *aχšaēna-*, Ō. *šīn-wū*.

(8) Syncope of original *a* occurs in Av. *χvasura-*, Ō. *χsir*; Skr. *mahiṣa-*, Ō. *miš*, a buffalo; O. Prs. *parana-*, Ō. *prān*, yesterday.

(9) Apocope of *a* is very common, or, rather, it is universal except in the case of a monosyllable such as *pa*, by (see § 40, 1). Thus; Av. *χvasura-*, Skr. *mahiṣa-*, as above. Similarly, Av. *fšu-pāna-*, Ō. *šwān*; Av. *darəγa-*, Ō. *dāraγ*; Av. *aspa-*, Ō, *yāsp*; Av. *ašta*, Ō. *hāšt*, and many others.

(10) Original *a* is nasalized in Av. *hiδaiti*, Ō. *hāyī*, he sits; O. Prs. **āvayaka-*, Ō. *hanwalk* (*hãwalk*), an egg. More often in such a case the original *a* is lengthened to *ā*, see the next §.

§ 4. *ā*.

(1) *ā* = original *ā*. Thus:—

(*a*) Initial:—No instances of this have been noted. In the two cases noted of original *ā*, it has become *a*. See § 3, 2.

(*b*) Medial:—Av. *fšu-pāna-*, Ō. *šwān*; Av. *nāvaya-*, Ō. *nāw^{a}*; Av. *pāδa-*, Ō. *pāṛī*; Av. **brāθrya-*, Ō. *rāšai*.

(*c*) Final *ā* usually becomes *^{a}*. See § 2, 2.

(2) Medial *ā* also sometimes represents an original *a*. In every example noted the *a* either followed or preceded the letter *r*, and a syllable has generally been elided. Thus: Av. *arš-*, Ō. *rāχ^{a}*; Av. *darəγa-*, Ō. *drāγ* or *dāraγ*; O. Prs. *parana-*, Ō. *prān*; Av. *sarəta-*, Ō. *sāl^{a}*.

(3) Other cases of contraction also result in *ā*. Thus: Av. *maoiri-*, Ō. *mār*(*šōī*); Av. *tūirya-*, Ō. *tā* (cf. P. *tr^{a}*).

(4) *ā*, representing an original *a*, is sometimes nasalized. Thus: Av. *aspa-*, Ō. *yāsp*; Av. *ašta*, Ō. *hãšt*.

§ 5. *i*.

Regarding this vowel, see § 1, Rem. 1.

(1) *i* = original *i*.

(*a*) Initial :—No examples.

(*b*) Medial :—Av. *pitar-*, Ō. *piē* ; Skr. *mahiṣa-*, Ō. *miš*, with syncope of *ah*. The preposition *nis* generally becomes *na* (§ 3, 3), but in one case it becomes *ni* ; Skr. *nis* + *sarati*, Ō. *nisī*.

(2) As in Bal. (EB. § 5, 3), under the influence of a neighbouring palatal letter or *r*, an original *a* may be represented by *i*. Thus:—Skr. *šaknōti*, Ō. *hīṯsī*, he is able ; Av. *taršti-*, Ō. √*tišt-* ; Av. *star-*, Ō. *stirrak*, a star ; Av. χ*vasura-*, Ō. χ*sir* ; Phl. *ārd*, meal, Ō. *hīlᵛēk*, to grind ; Av. *arəša-*, Ō. *hīṛs*, a bear. In Skr. √*nam-*, Ō. √*nim-*, the *i* probably represents ᵃ. See § 1, Rem. 1.

(3) So, under the influence of *r*, original *ə* is represented by *i* in Av. *mərəγa-*, Ō. *mirgᵃ*.

(4) The Sanskrit vowel *ɻ* appears as *ir* in Skr. *gɻṇāti*, Ō. *γirī*. Cf. *hīṛs* below.

(5) We have nasalization of *i* in Phl. *ārd*, meal, Ō. *hīlᵛēk*, to grind ; Av. *arəša-*, Skr. *ɻkṣa-*, Ō. *hiṇs* or *hīṛs*, a bear ; Skr. *šaknōti*, Ō. *hīṯsī*, he is able.

§ 6. *ī*.

Regarding this vowel, see § 1, Rem. 1.

(1) *ī* = original *ī* :—

Medial :—Skr. *vrīhi-*, Ō. *rīḏ-an*, rice.

(2) In Av. χ*šap-*, Ō. *šīw*, night, after the palatal *š*, *a* has become *ī*, instead of *i* (§ 5, 2), in compensation for the weakening of the following *p* to *w*.

(3) In Av. *zərəd-*, there has been metathesis of the *r*, and the two *ə*s coming together, have become *ī*, in Ō. *zlī*, the heart.

(4) *ī* is often the result of crasis. Thus Av. *raiθyā-* becomes Ō. *rāī* ; Av. *navaiti-* becomes Ō. *nawī* ; Av. *aχšaēna-* becomes Ō. *šīn*(*wū*) ; and Av. *spaēta-* becomes *spīw*. Of special importance is the termination of the third person singular of the verbal present, Av. *-aiti*, Skr. *-ati*. After syncope of the *t*, as has occurred in the similar case of Av. *navaiti-*, the termination becomes Ō. *ī*. Thus, Av. *baraiti*, Skr. *bʻarati*, Ō. *wᵃrī*, he carries.

§ 7. *u*.

Regarding this vowel, see § 1, Rem. 1.

(1) *u* = original *u*.

(*a*) Initial :—No instances noted. Initial *u* becomes *wu*. See 4 below.

(*b*) Medial :—Av. *gantuma-*, Ō. *gunum*, wheat ; Av. *sukurəna-*, Ō. *sukal*, a porcupine. In the former, the first *a* has become *u* (see No. 2, below), and in the latter, the second *u* has become *a* (see § 3, 4).

(2) *u* = original *a* in Av. *gantuma-*, Ō. *gunum* ; Av. *garəwa-*, Ō. *gurū*. In both cases the change is due to the influence of the *u* in the following syllable. Av. *span-*, Medic σπάκα, Ō. *spuk* ; Av. √*marz-*, Ō. √*muχ-aw-* ; Av. √*mar-*, Ō. √*mul-*. In these the change is due to the preceding labial letter. In the same way we can explain Av. *brāzaiti*, Skr. *bʻrājatē*, Ō. *brušī*, he glitters. In this connexion compare Av. √*pac-*, Phl., Prs. *puχ-tan*, but Ō. *paχ-ᵛēk*.

(3) *u* = original *ū* in Skr. √*cūrṇ-*, Ō. √*ṯuṇ-aw-*, sift.

(4) An initial original *u* becomes *wu*, as in O. Prs. *us* + √*stā-*, Ō. √*wust-*, rise.

Compare Phl. *ōzmūtan*, Ō. √*wuzm-aw-*, test. So O. Prs. *uškā-*, Ō. *w(y)ūk*, dry, with compensatory lengthening.

(5) Syncope of *u* occurs in Av. *fšu-pāna-*, Ō. *ṣwān*, a shepherd.

§ 8. *ū*.

Regarding this vowel, see § 1, Rem. 1.

(1) *ū* = original *ū*.

Medial:—Skr. *p'ūt-*, Ō. *pūt*, puffed out; Av. *tūm*, Ō. *tū*.

(2) *ū* = original *u*, owing to compensatory lengthening, due to the simplification of a following compound consonant. Av. √**du*χš-, Ō. √*dūs-*, milk; Av. *duγδar-*, Ō. *dūwª*, a daughter; O. Prs. *uška-*, Ō. *w(y)ūk*, dry.

(3) *ū* is sometimes the result of crasis, as in Av. *raoc-ah-*, Ō. *r(y)ūz*; Av. *raoγna-*. Ō. *rūn*, clarified butter.

(4) *ū* may represent a vocalized *w*, as in Av. *garəwā-*, Ō. *gurū*, a kid.

(5) *ū* is nasalized in *būy*, borrowed from Prs. *būē*, scent.

§ 9. *ē*.

Regarding this vowel, see § 1, Rem. 1.

(1) No case of the retention of an original *ē* has been noted. In Ōrmuṛī it appears to be always secondary.

(2) It represents an original *iya* or *uya* in Av. *caθrudasa* (through **caθruasa* **caθruyasa*), Ō. *ƀarēs*, fourteen; O. Prs. *ciyant-*, Ō. *ƀēn*, what?

(3) *a* has become *ē* owing to the influence of a neighbouring palatal in Av. *panca*, Ō. *pēnƀ*, five.

(4) It appears before *š* in Phl. *tāχr*, Ō. *tēš*, bitter; Av. *miθra-*, Ō. *mēš*, the sun

(5) It is nasalized in *hẽƀscī* (*hēnƀscī*), tears. Cf. Skr. *ašru-*. The vowel changes in this word cannot at present be explained, as we do not know the form of the singular. See vocabulary s.v.

(6) In Av. *darəγa-*, Ō. *dāraγ*, long, there has been syncope of *ə*. So Av. *mərəγa*, Ō. *mirgª*, a bird, other similar cases.

§ 10. *ai*.

(1) This diphthong has been noted only as a termination of masculine nouns, adjectives, and participles, which is most probably borrowed from Pªṣtō, as in the word *saṛai*, a man, which is common to both languages. The termination is derived from *-aka-* through **-aya-*. See GIP, I. ii. 210.

(2) Original *ai* is syncopated in Av. *gairi-*, Ō. *grī*, a mountain. Cf. also § 3, 6.

§ 11. *ō*.

Regarding this vowel, see § 1, Rem. 1.

(1) *ō* represents an original *ao* in Av. *gaoša-*, Ō. *gōy*, an ear.

(2) As in P. *ō* sometimes represents an original *ā*. Thus, Skr. *palāla-*, Ō. *parōṛ'*, rice-straw: Skr. *šāli-*, Ō. *šōl*, rice. It will be observed that both these words come from India. They are both almost certainly borrowed from Wazīrī Pªṣtō. Cf. also Prs. *šār*, Ō. *šōr*, a city. Here the Ō. word has certainly been borrowed from Prs. through Wazīrī Pªṣtō. See § 46.

(3) *ō* frequently represents an original labial consonant or semi-vowel. Thus, Av., Skr. √*tap-*, Ō. *tō-k*, hot; Av. *dva*, Ō. *d(y)ō*, two; Av. *cvant-*, Ō. *tōn*, some. Similarly, *a* has become *ō* under the influence of the following *m* in Skr. *namra-* (through **naṽra-*), Ō. *nōš*, soft.

§ 12. General View of Vowel-changes.

(1) Changes of quantity :—

(*a*) The vowel *a* is lengthened. In every case noted the vowel is either preceded or followed by *r*, and in most cases a syllable adjoining has been elided. § 4, 2.

Instances of compensatory lengthening of *u* will be found in § 8, 2. There is no compensatory lengthening in Skr. *ḍimba-*, Ō. *ḍim*, the belly, § 20, 2.

(*b*) The vowel *ā* is shortened to *a* in feminine terminations. § 2, 2.

The prefix *ā* becomes *a*. § 3, 2.

ū becomes *u* in Skr. √*cūrṇ-*, Ō. √*tuṇ-aw-*. § 7, 3.

(2) Changes of quality :—

(*a*) *a* and *ə* become *i* under the influence of a neighbouring palatal letter or *r*. § 5, 2, 3.

(*b*) *a* becomes *u* under the influence of a neighbouring labial letter. § 7, 2.

(*c*) *u* becomes *a* under the influence of a neighbouring guttural letter. § 3, 4.

(3) Changes of quantity and quality :—

(*a*) *a* becomes *ī* or *ē* under the influence of a neighbouring palatal. §§ 6, 2; 9, 3, 4.

(*b*) *i* becomes *ē* in Av. *miθra-*, Ō. *mēš*. § 9, 4.

(*c*) *ē* becomes *a* under the influence of a neighbouring guttural. § 3, 5.

(4) Aphæresis of :—*a*, § 3, 7.

(5) Syncope of :—*a*, § 3, 8; *ai*, § 10, 2; *ə*, in Av. *mərəγa-*, Ō. *mirgª*, §§ 5, 3; 9, 6; *u*, § 7, 5.

(6) Apocope of *a*, § 3, 9.

(7) Crasis :—*ai-i*, *a*, § 3, 6. *ai-i*, *ī*, § 6, 4; *ə-ə*, *ī*, § 6, 3; *ūi*, *ā*, § 4, 3; *aē*, *ī*, § 6, 4; *ao*, *ū*, § 8, 3; *aoi*, *ā*, § 4, 3.

(8) Nasalization of :—*a*, § 3, 10; *ā*, § 4, 4; *i*, § 5, 5; *ū*, § 8, 5; *ē*, § 9, 5.

II. SEMIVOWELS, LIQUIDS, AND NASALS.

§ 13. *y*.

(1) *y* = an original Skr. *y*, only as an initial, in Skr. √*yas-*, Ō. √*yas-*, to boil. An original Av. *y* becomes *dz*. See § 32, 2. No instances of an original medial *y* have been noted, but medial Skr. *hy* becomes *y* in Skr. *sahyati*, Ō. *sayawī*, he endures. Cf., however, Ō. *myaur*, in 4, below.

(2) An original š exceptionally becomes *y* in Av. *gaoša-*, Ō. *gōy*, an ear. Perhaps, in this case, the š has really been elided, and the *y* represents an *ī*, as a feminine termination. Cf. § 28, 14.

(3) We have prothesis of *y* in Av. *aspa-*, Ō. *yāsp*, a horse. On the other hand, from Av. *ašta*, we have Ō. *hāšt*, eight, with prothesis of *h*.

(4) *y* is frequently inserted before a long vowel. Thus :—

Before *ā*. P. *māšai*, Ō. *myāsī* (borrowed), a mosquito ; Prs. *mādiyān*, Ō. *myāndēnī* (borrowed), a mare.

Before *ō*. Av. *dva*, Ō. *dyō*, two ; Ō. *wazōk* or *wazyōk*, to kill ; Av. *gao-*, Skr. *gō-*, Ō. *giyōy*, a cow.

Before *ū*. This is very common, as in Prs. *pōz*, Ō. *pyūz*, the face ; Skr. *dru-*, Ō. *dyūr*^{u}, firewood ; Av. *raoc-ah-*, Ō. *ryūz*, a day ; Ō. *tyūs*, *tyūz*, you, but *tū*, thou ; O. Prs. *uška-*, Ō. *wyūk*, dry. In Skr. *mayūra-*, Ō. *myaur*, a peacock, it is doubtful if the *y* is original or not.

Before *ē*. There is a special tendency to insert *y* before a medial *ē*. We see this best in infinitives ending in *ēk*. Here a faint sound of *y* is audible before the *ē*, as in *ɣaf*^{y}*ēk*, to weave. If the root ends in a vowel, nasalized or not, the *y* is fully sounded, as in *hãyēk*, to sit.

This insertion of *y* before a long vowel is evidently borrowed from Wazīrī P^{a}štō. See § 47.

§ 14. *w*.

(1) *w* = original *v*, *w* :—

(*a*) Initial :—This occurs only when the letter was originally medial, as in Av. *aiwi* + √*jan-*, Ō. *waz-yōk*, to kill. Such a word as Ō. *w^{a}n^{a}*, a tree, is borrowed from the P. *wana*.

(*b*) Medial :—Av. *navaiti-*, Ō. *nawī*, ninety ; Av. *nāvaya-*, Ō. *nāw^{a}*, a hill-valley.

(2) Original initial *va* or *vi* becomes *ɣwa*. Thus, Av. √*vac-*, Ō. *ɣwaṧī*, he speaks ; Skr. *vatsa-*, Ō. *ɣwaṧ*, a calf ; Av. √*vaz-*, to fly, Ō. *ɣwaza*, he falls ; Av. √*va*$_{\chi}$*š-*, Ō. *ɣwāsī*, grass ; Skr. *visrāvayati*, Ō. *ɣwašaī*, he washes ; Skr *vitrasati*, Ō. *ɣwaša*, he fears ; Skr. *vṛšyatē*, he is selected, Ō. *ɣwaršī*, he appears good. Original *vā* becomes *ɣō*, as in Av. *vāra-*, Ō. *ɣōr-*^{y}*ēk*, to rain. But original *vī* becomes *jī* (§ 27). In one case, O. Prs. √**varšt-*, Prs. *gaštan*, Ō. *gist-*^{y}*ēk*, to return, the presence of *g* instead of *ɣ* is explained by the fact that the word is borrowed from Prs. Though written *gist-*, the Ō. word is probably *g^{a}st-*. See § 1, Rem. 1.

(3) *$_{\chi}$w* = original *$_{\chi}$v* (Skr. *sw*). Thus, Av. *$_{\chi}$vafna-*, Ō. *$_{\chi}$wāw*, a dream ; Av. *$_{\chi}$vaṅhar-*, Ō. *$_{\chi}$wār*, a sister ; Skr. *swasrīya-*, Ō. *$_{\chi}$warkai*, a sister's son ; Av. √*$_{\chi}$var-*, Ō. *$_{\chi}$wal-ak*, to eat ; but ; *$_{\chi}$*^{w}*ura*, he eats ; Skr. √*sward-*, to taste, Ō. *$_{\chi}$waš*, sweet.

(4) *dw* = original *dv* in Av. *dvadasa*, Ō. *dwās*, twelve. On the other hand, it is vocalized in Av. *dva*, Ō. *d*(*y*)*ō*, two, and becomes *b* in Av. *dvar-*, Ō. and Kurd. *bar*, a door.

(5) *w* = an original medial *p*, as in Av. *fšu-pāna-*, Ō. *šwān*, a shepherd ; Av. √*ap-*, Ō. *w-ōk* to obtain ; Av. *āp-*, Ō. *w^{a}-k*, water ; Av. *$_{\chi}$šap-*, Ō. *šīw*, night (cf. Kurd. *šäw*). An original initial *p* is retained (§ 40, 1).

(6) Similarly, for compound consonants we have *pt* in Av. *haptāiti-*, Ō. *awāī*, seventy; but Av. *χšvipta-*, Ō. *šippī* or *šīpī*, milk; *fn* in Av. *χvafna-*, Ō. *χwāw*, sleep; and (Skr.) *sp'* in Skr. *sp'āṭayati*, Ō. *χwasrawī*, he opens; Skr. *sp'urati*, Ō. *χʷurtī*, he trembles.

(7) *w* = an original *b* only in borrowed words, such as Av. √*bar-*, Ō. *wr-iyōk*, to carry; Prs. *āb-rīz*, borrowed as Ō. *āwrīz*, a privy. Ō. *wr-iyōk* must be borrowed from P. *wṛ-ᵃl*, for, in Ō., original initial *b* = *b*. See § 41, 1, 2.

(8) *w* has been inserted after *g* in Ō. *γwarḍ-ʸēk*, to roar, if it is connected with Skr. √*gard-*, *gardati*, which seems probable on the analogy of P. *γar-ēdᵃl*, Bal. *garr-aγ*. Cf. ELA, 39, where the former is derived from Skr. √*gṝ*, *gṛṇāti*. This Ō. word is however borrowed from P. (§ 47). Other more certain instances of the insertion of *w* are Phl. *candīnītan*, Ō. *ƚwan-ʸēk*, to shake out dust; Av. *spaēta-*, Ō. *spīw* (with elision of *t*), white.

(9) Syncope of *v* occurs in Av. √*bū-*, *bav-*, Ō. *bi-yōk*, to be; and of *θw* in Av. *caθwār-*, Ō. *ƚār*, four.

§ 15. *r*.

(1) *r* = original *r*:—

(*a*) Initial:—Skr. *rat'yā-*, Av. *raiθyā-*, Ō. *rāī*, a road; Av. *raoγna-*, Ō. *rūn*, clarified butter; Skr. √*riš-*, Ō. √*ras-*, to spin.

(*b*) Medial:—Av. *arš-*, Ō. *rāχᵃ*, truth; Skr. *uraṇa-*, Ō. *wrai*, a mountain sheep; Av. *garəwa-*, Ō. *gurū*, a kid; Av. *gairi-*, Ō. *grī*, a mountain; Av. *caθwār-*, Ō. *ƚār*, four; Skr. *tarati*, he crosses, Ō. *tar*, elapsed; Skr. *taruṇa-*, tender; Ō. *tīrī*, moist sugar; Av. √*tərəs-*, Ō. √*tra-* (*trayēk*), to shy; Av. √*θwarəš-*, Ō. √*trāš-*, to cut; Av. √*dar-*, Ō. *darī*, he owns; Av. *darəγa-*, Ō. *drāγ*, long; Av. *dvar-*, Ō. *bar*, a door; O. Prs. *parana-*, Ō. *prān*, yesterday; Skr. *parigud'nāti*, Ō. *parγūnī*, he dresses himself; Av. *pairi* + √*vaχš-*, Ō. √*praw-*, to sell; Skr. *pari* + √*st'ā-*, Ō. √*prast-*, to worship; Skr. *pari* + √*sic-*, Ō. √*prusn-*, to sprinkle; Av. *maoiri-*, Ō. *mār-ƚōī*, an ant; Av. *mərəγa-*, Ō. *mirgᵃ*, a bird; Av. *vāra-*, rain, Ō. *γōra*, it rains; Av. *sarah-*, Ō. *sar*, the head; Av. √*zar-*, Ō. *zarkᵃ*, a woman; Av. *hazaŋra-*, Ō. *zār*, a thousand; Av. *χvasura-*, Ō. *χsir*, a father-in-law; Av. √*χvar-*, Ō. *χʷura*, he eats, but infinitive and past participle *χwal-ak*, with change of *r* to *l* (§ 17, 3).

(2) Similarly, *r* represents an original *ṛ* or *ṝ*, as in Skr. *gṛṇāti*, Ō. *γirī*, he roars; Skr. √*dṝ*, *dīryati* or *dṛṇāti*, he rends, Ō. *r-ʸēk*, rent. Skr. *vṛšyatē*, he is selected, Ō. *γwaršī*, he appears good.

(3) *r* does not represent an original *l*. The one apparent example, Skr. *palāla-*, Ō. *parōṛᵘ*, rice-straw, is borrowed from India. Cf. Sindhī *parārᵘ*. The change of *ā* to *ō* is due to the influence of Wazīrī Pᵃšto (§ 46).

(4) When an original compound consonant contains an *r*, the whole generally becomes Ō. *š* (§ 29, 1). But in a few cases it becomes *r*. Thus, Av. **caθrudasa*, Ō. *ƚarēs*, fourteen. But here the Av. *θr* is not a genuine compound, as is evident from

the Skr. *caturdaša-*. Av. **brāθrya-*, Ō. *rāṣai*, a brother's son. In this the original Ō. form may have been **ṣ̌āṣ̌ai*, the first *ṣ̌* becoming *r* for ease of pronunciation. Cf. *ṣustak* for **ṣ̌ustak* in § 29, 1*c*. On the other hand, as stated in § 29, 1*g*, there are no instances of the occurrence of this change of *br* to *ṣ̌*. Skr. *vrīhi-*, Ō. *rīẓan*, rice. In this the *v* probably represents an original vowel. Cf. Greek ὄρυζα. Less easy to explain are Skr. *grat'nāti*, he ties, Ō. *granyī*, a knot (cf. § 29, 1*c*), and Av. *brāzaiti*, Skr. *b'rājatē*, Ō. *brušī*, he glitters.

(5) In the case of original compounds of which *r* is the first member, we have Skr. *pitṛvya-*, Av. *tūirya-*, Ō. *tā*, a paternal uncle, where there has been syncope of *ṛ* or *ry*. Cf. P. *tr*^{a}. As a rule Skr. *rt* becomes Ō. *ṛ* (§ 16, 1), and Eranian *rt*, *rθ*, *rd*, *rδ*, and *rn*, become *l* (§ 17, 3).

(6) Syncope of *r* occurs in Av. √*kar-*, Ō. *ka-yēk*, to do; Av. √*grab-*, *gərəwnāiti*, p.p. *gərəpta-*, Ō. *gla-s-tak* or *ga-s-tak*, to take away; Skr. *niḥsarati*, Ō. *nisī*, he emerges. This kind of syncope is very common in the Piśāca languages.

(7) There is apocope of *r* in Av. *pitar-*, Ō. *piē*, a father; Av. *mātar-*, Ō. *māw*^{a}, a mother. These may be considered as nursery words.

§ 16. *ṛ*.

(1) *ṛ*, which is rare except as a medial, represents an original *rt* in Skr. *garta-*, a hole, Ō. *γiṛ-*^{y}*ēk*, to hide.

(2) *ṛ* exceptionally represents an original *l* or *r* in Prs. *kalāγ*, Ō. *kṛāγ*, a crow. ? cf. Ō. *kṛāg*^{a}, a hyena, the derivation of which is unknown to me. In Ō. *pāṛī*, a foot, the *ṛī* is a diminutive termination borrowed from India. The original is Av. *pāδa-*, Skr. *pāda-*.

(3) Nearly every word containing *ṛ* in Ō. is borrowed from P. The above are the only instances that I have noted which do not appear to have been so borrowed. The word *taṛ*^{a}, a tank, is derived from Skr. *taṭa-*, and is evidently borrowed from India.

§ 17. *l*.

(1) *l* = original initial Skr. *l*, Eranian *r*, in Skr. *lihanti*, Av. *raēzaite*, they lick; Ō. √*las-*, lick; Skr. *lagyatē*, Ō. *laga*, he is applied; P. *rawd-*^{a}*l*, Ō. *lup-*^{y}*ek*, to be suckled; Skr. √*luḍ-*, Ō. √*laṛ-*, to stir; O. Prs. *rādiy*; Prs. *tū-rā*, Kurd. *-ta*, *ra*; P. *dar*; Ō. *dal*, to thee.

(2) The change of *d* to *l* occurs only in words borrowed from P., such as Ō. *lēwū* (P. *lēw*^{a}), a wolf; Ō., *lawanai*, P. *lēwanai*, mad.

(3) Medial *l* = original Eranian medial *r* in Av. √*grab-*, *gərəwnāiti*, p.p. *gərəpta-*, Ō. *gla-s-tak* or *ga-s tak*, *glī*, he takes away; Eranian √**garθ-*, Ō. *galī*, he twists; Av. *dərəta-*, cut, Ō. √*dil-*, to reap; Av. *mərəta-*, dead, Ō. √*mul-*, to die; Av. *sarəta-*, Ō. *sāl*^{a}, coldness; Av. *sarəδa-*, Ō. *sal*, a year; Av. *sukurəna-*, Ō. *sukal*, a porcupine; Av. *zərəd-*, Ō. *zlī*, the heart; Av. √*χvar-*, Ō. *χwal-ak*, to eat, but *χ*^{w}*ura*, he eats (see § 15, 1*b*). We have seen in § 15, 1*b* that medial *r* also = original *r*. The reason why *r* has remained unchanged in some words, and has apparently become *l* in others, is that in every case in which *r* has become *l*, in Ō. Prs. and Av. it is invariably

followed by a dental letter (*t*, *d*, *θ*, *δ*, or *n*), which either follows it immediately or is separated from it only by the letter *ə*. Thus :—

rət—gərəpta-, *dərəta-*, *mərəta-*, *sarəta-*.
*rθ,—√*garθ-*.
rəd,—zərəd-.
rəδ,—sarəδa-.
rən,—sukurəna-.

As for *χwal-ak*, *χʷura*, we must remember that *χwalak* is by origin a past participle, and corresponds to Av. *χvərəta-*, while *χʷura* corresponds to Av. *χvaraiti*, in which the *t* is separated from the *r* by the diphthong *ai*, not by *ə*. In the same way we can account for the Aor. of *dilak*,—Aor. sg. 2, *dir* 3, *dirī*; *na-wᵃlak*, to take out,—Aor. sg. 3, *na-wᵃra* : *mulak*, to die,—Aor. sg. 3, *mrī*. In none of the above cases is the *ə* original. The original forms were *rt*, *rd*, *rδ*, *rn*, and we are thus entitled to state that Eranian *r* + dental becomes *l* in Ō, and to compare the fact with the change of *rd* to *l* in modern Prs. (GIP. I, ii, 56). This applies only to words of Eranian origin Skr. *rt* becomes Ō. *ṛ* (§ 16, 1 ; cf. § 15, 5).

(4) An *l* appears to have been inserted in O. Prs. **āvayaka-*, Phl. *χāyak*, Ō. *hãwalk* (*hanwalk*), an egg.

§ 18. *n*.

(1) *n* = original *n* :—

(*a*) Initial :—Skr. √*nam-*, Ō. √*nim-*, to descend ; Av. *nava*, Ō. *nᵃh*, nine ; Av. *nāvaya-*, Ō. *nāwᵃ*, a hill valley.

(*b*) Medial :—Av. *aχšaēna-*, green; Ō. *šīn-wū*, spinach ; Av. *paθana-*, Ō. *pan*, wide ; O. Prs. *parana-*, Ō. *prān*, yesterday ; Av. *paiti* + √*zan-*, Ō. √*pazan-*, to recognize ; Av. *fšu-pāna-*, Ō. *šwān*, a shepherd ; Av. *maēθman-*, Ō. *mēmnī*, a female guest ; Av. *zanu-*, Ō. *zēnī*, the chin.

(2) In one word borrowed from India, probably through the Piśāca languages, *n* = an original *l*. Prakrit √*lē-*, to take, Ō. *n-ōk*, to take. Cf. Kšm. √*ni-*.

(3) *n* = original *nt* or *nd* :—

(*a*) *nt*, Av. *gantuma-*, Ō. *gunum*, wheat ; Av. *cvant-*, Ō. *ʦōn*, some ; O. Prs. *ciyant-*, Ō. *ʦēn*, what ? So all third persons plural of the Aorist (= old present), as in Av. *barənti*, Ō. *wᵃrin*, they take.

(*b*) *nd*, Phl. *χandītan*, to laugh, Ō. *χana*, he laughs ; Phl. *candīnītan*, Ō. *ʦwanʸek*, to shake out dust. But Av. *aēvandasa* (GIP, I, i, 112), Ō. *sandas*, eleven (see § 35, 4).

(4) *n* = original *γn* in Av. *raoγna-*, Ō. *rūn*, clarified butter.

(5) *n* = original *d'n* in Skr. *parigud'nāti*, Ō. *parγūnī*, he dresses himself.

(6) Original *nc* becomes *nj* before a palatal vowel ; otherwise, *nʦ*. Av. *panca*, Ō. *pēnʦ*, five ; but *panjī-jīstū*, twenty-five ; Skr. *pari-siñcati*, Ō. *prūnʦ-aw-ʸēk*, to cause to sprinkle ; but *prusnawī*, he sprinkles, with metathesis of *n* and *c*, and change of *c* to *s*.

(7) Occasionally *nd'*, *d'n* becomes *nʦ*. Thus, Skr. *gand'a-*, a stink, Ō. *γanʦ*,

bad; Skr. *gud'nāti* (cf. No. 5 above), Ō. *γūnd̠*, a garment. In these cases, it is evident that the *d* has become *d̠* under the influence of a lost suffix consisting of *ī* or some similar palatal letter.

§ 19. *ṇ*.

(1) This letter rarely occurs in Ō. words. When it appears it is almost always in words borrowed from P. In Ō:—

(2) *ṇ* = original *rṇ*, as in Skr. √*cūrṇ-aya-*, to pulverize; Ō. *t̠uṇ-aw-ʸēk*, to sift.

(3) *ṇs*, also written ~ *ṛs* = original *rš* in Av. *arəša-*, Ō. *hiṇs* or *hīṛs* (Prs. *χirs*), a bear.

§ 20. *m*.

(1) *m* = original *m*:—

(*a*) Initial:—Av. *maχši-*. Ō. *mᵃ ṣ̌ī*, a fly; Av. *maδaχā-*, Ō. *mēχ*, a locust; Av. *mana*, Ō. *mun*, my; Av. √*marz-*, Ō. *muχ-aw-ʸēk*, to rub; Skr. *mahiṣa-*, Ō. *miṣ̌*, a buffalo; Av. *mātar-*, Ō. *māwᵊ*, a mother; Av. *miθra-*, Ō. *mēṣ̌*, the sun; Av. *mərəγa-*, Ō. *mirgᵃ*, a bird; Skr. *pra-mṛṣṭa-*, forgotten, Ō. *ṣ̌a-mōt*, forgetful; Av. *maēθman-*, Ō. *mēmnī*, a female guest; Av. *maēša-*, Ō. *maī*, a ewe; Av. *maoiri-*, Ō. *mār-t̠ōī*, an ant.

(*b*) Medial:—Av. *dasəma-*, Ō. *dasam*, tenth; Skr. √*nam-*, Ō. √*nim-*, to descend.

(2) As a member of a compound, *m* is preserved, the other member usually disappearing. Thus, Skr. *ḍimba,-*, Ō. *ḍim*, the belly (borrowed from India); Av. *cašman-*, Ō. *t̠ōm* (pl. *t̠amī*), the eye; Av. *ahmākəm*, O. Prs. *amāχam*, Ō. *māχ*, us; but Av. *ahmi*, O. Prs. *amiy*, Skr. *asmi*, Ō. *hᵃm*, I am. In Phl. *ōzmūtan*, Ō. *wuzm-aw-ʸēk*, to test, the entire compound is preserved. Here, the *z* and the *m* belong to two different words,—Av. *ava* + *uz* + √*mā-* (H. 21).

III. MUTES AND SPIRANTS.

A. GUTTURALS.

§ 21. *k*.

(1) *k* = original *k*.

(*a*) Initial:—Av. *ka-*, who? Ō. *ka*, who (relative); *kuk*, who? (interrogative); Av. √*kar-*, Ō. *kawī*, he does; Av. √*kart-*, Ō. *kart̠ī*, split; Skr. *kṛtē*, for, Ō. *kū*, on.

(*b*) Medial:—Av. *sukurəna-*, Ō. *sukal*, a porcupine; Medic σπάκα Ō. *spuk*, a dog. Cf. also the *ka-* suffix below.

(2) In two instances, both of interrogative adverbs, we have the interchange of initial *k* with *g*. Ō. *gudā*, where? *kān* or *gān*, when? We may compare this with the Kurd. *kō* or *gō*, who (relative). We have similar changes in the Piśāca languages, as in Maiyā, *gī*, what?; Kšm. *gāš* (Skr. *kāša-*), light. In Skr. *sikatā*, Ō. *sagᵃ*, sand, the Ō. word has been borrowed from P.

(3) In one word medial Av. *k* has apparently been weakened to *χ*. Av. *ahmākəm*, Ō. *māχ*, us. But, cf. O. Prs. *amāχam*, the *χ* is the original Eranian sound, which has been preserved in Ō. as well as in old Bal. and in Munjānī.

(4) *k* = original *šk* in O. Prs. *uška-*, Ō. *w(y)ūk*, dry.

(5) The *ka* suffix. This suffix appears under the form of *-k*, with a feminine *-k*^{a}. Thus :—

(*a*) Masculine nouns. Av. *āp-*, Ō. *w*^{a}*-k*, water; Av. *star-*, Ō. *stirr-ak*, a star; Av. √*yā-*, come; Ō. *ʞā-k*, a place.

(*b*) Feminine nouns. Skr. *c'āyā*, Prs. *sāya*, Ō. *s(y)ā-k*^{a}, shade; Av. *gao*, an ox; Ō. *gā-k*^{a}, flesh.

(*c*) Adjectives. Av. *tafta-*, Skr. *tapta-*, Ō. *tō-k*, hot; Av. √*mar-*, die, Ō. *mā-k*, withered.

(*d*) It is added to the negatives *na-k* and (prohibitive) *ma-k*, not.

(*e*) The most prominent use is in past participles and infinitives. These are in each case identical in form, and end in *ak*, *ōk*, or *ēk*. Thus, Av. *dərəta-*, cut, Ō. *dil-ak*, reaped, or to reap; Av. √*jan-*, strike, Skr. *hata-*, struck, Ō. *ʞ-ōk*, struck, or to strike; Skr. *gup'ita-*, plaited, Ō. *ɣaf-*^{y}*ēk*, woven, or to weave. The origin of the various vowels preceding the *k* is not yet satisfactorily established to my mind, but the fact that the termination *k* is the *ka* suffix is evident.

§ 22. χ.

(1) χ = original χ :—

(*a*) Initial :—Phl. *χandītan*, to laugh, Ō. *χana*, he laughs.

(*b*) Medial :—O. Prs. *amāχam*, Ō. *māχ*, us (§ 21, 3); Phl. *puχ-tan*, Ō. *paχ*^{y}*ēk*, to cook; Av. *maδaχā-*, Ō. *mēχ*, a locust.

(2) χ = original *k'*. Skr. *muk'a-*, Ō. *muχ*, the face; Skr. *šik'ā-*, a point, Ō. *sūχ-aw-*^{y}*ēk*, to prick.

(3) χ = an original *rz* (Skr. *ṛj*) in Av. √*marz-*, Skr. √*mṛj-*, Ō. *muχ-aw-*^{y}*ēk*, to rub. Cf. Prs. *muš-tan*, P. *muṣ-*^{a}*l*, Northern P. *muχ-*^{a}*l*. The word may possibly be borrowed from Northern P., but this is extremely unlikely. O. always does its borrowing from the Southern, Wazīrī, P. Also cf. Ō. and Munjānī *māχ*, Š. *māš*, us. *Rz* (= Skr. *ṛṣ*) is probably represented by Ō. *ž* (§ 30).

(4) Very similarly, we have χ representing original *š* in Av. *arš-*, Ō. *rāχ*^{a}, truth.

(5) Initial χ = original *χv* (Skr. *šv*). Av. *χvasura-*, Skr. *švašura-*, Ō. *χsīr*, a father-in-law. But original *χv* (Skr. *sv*) is preserved. See the next.

(6) As a member of a compound consonant, original χ is found combined with *r*, with sibilants, and with *v*. *χr* becomes *šr* (§ 29, 1*b*). In combination with sibilants (*χš*, *χšv*,), the χ always disappears (§§ 28, 8; 37, 3). But, with the single exception of *χsīr*, in 5 above (in which *χv* = Skr. *šv*), original *χv* (= Skr. *sv*) remains unchanged in Ō., as *χw*. Thus Av. *χvaŋhar-*, Skr. *swasār-*, Ō. *χwār*, a sister; Av. *χvafna-*, Ō. *χwäw*, a dream; Av. √*χvar-*, Ō. *χwal-ak*, to eat, *χ*^{w}*ura*, he eats (§ 17, 3); Skr. *swasrīya-*, Ō. *χwarkai*, a sister's son; Skr. √*sward-*, to taste, Ō. *χwaš*, sweet; Av. *χvatō*, Ō. *χwai*, own.

(7) *χw* = original *sp'* in Skr. *sp'āṭayati*, Ō. *χwasrawī*, he opens; Skr. *sp'urati*, Ō. *χ*^{w}*urtī*, he trembles. In *χwasrawī*, the original *s* has been preserved by metathesis.

§ 23. *g*.

(1) *g* = original Eranian *g*. Only initial:—Av. *gairi-*, Ō. *grī*, a mountain; Av. *gantuma-*, Ō. *gunum*, wheat; Av. *garəwa-*, Ō. *gurū*, a kid; Av. *gərəwnāiti*, Ō. *glī*, he takes away (§ 17, 3); Av. *gao-*, an ox, Ō. *gā-k*^{a}, flesh; Av. *gaoša-*, Ō. *gōy*, the ear. An original Indian *g* is represented by *γ*, whether initial or medial. Already in the later Av. an unprotected medial *g* had become *γ*.

(2) In one word, *g* = original Eranian medial *γ*. Av. *mərəγa-*, Ō. *mirg*^{a}, a bird. On the other hand, an original Eranian medial *γ* is preserved in Av. *darəγa-*, Ō. *drāγ*, long.

(3) In two cases, *g* = original *k*. See § 21, 2.

(4) Original *gr* = Ō. *gr.* in Ō. *granyī*, a knot (see §§ 15, 4; 29, 1*c*), or it may become *ş̌* (29, 1*c*).

§ 24. *γ*.

(1) *γ* = original medial *γ* in Av. *darəγa-*, Ō. *drāγ*, long. But in Av. *mərəγa*, Ō. *mirg*^{ī}, a bird, original *γ* has become *g* (§ 23, 2). No instance has been noted of original initial *γ*.

(2) *γ* = original Indian *g*:—

(*a*) Initial:—Skr. *garta-*, a hollow, Ō. *γiṛ-*^{y}*ēk*, to hide; Skr. √*gud*^{ʻ}- **gud*^{ʻ}*nāti*, to clothe, Ō. *γūnd̠*, a garment; Skr. √*gṝ-*, Ō. *γirī*, he roars; Skr. *gup*^{ʻ}*ati*, he plaits, Ō. *γaf̠ī*, he weaves; Skr. *gand*^{ʻ}*a-*, a stink, Ō. *γand̠* bad.

(*b*) Medial:—Skr. *ā* + √*gam-*, Ō. *aγ-ōk*, to adjoin; Skr. *nir* + √*gam-*, Ō. *naγ-ōk*, to emerge; Skr. *pari* + √*gud*^{ʻ}-, **-gud*^{ʻ}*nāti*, Ō. *parγūnī*, he clothes himself.

(3) *γ* is prefixed to original initial *va*, *vi*, *vā* (§ 14, 2).

(4) *w* is inserted after initial *γ* in Ō. *γwarḍ-*^{y}*ēk*, to roar; but this word is borrowed from P. (§ 47).

(5) Original *γn* becomes *n* (§ 18, 4).

(6) We have syncope of *γδ* in Av. *duγδar-*, Ō. *dūw*^{a}, a daughter.

§ 25. *h*.

(1) *h* = original *h* in Av. *hapta*, Ō. *hō*, seven; Av. *hiδaiti*, Ō. *hãyī*, he sits.

(2) Final *h* = original *š* in Av. *χšvaš*, Ō. *ş̌*^{a}*h*, *ş̌ō*, six.

(3) In composition, *hm* (Skr. *sm*) becomes *m* (§ 20, 2), and *hy* becomes *y* (§ 13, 1). But Av. *ahmi*, O. Prs. *amiy*, Skr. *asmi*, becomes Ō. *h*^{a}*m*, I am.

(4) Prothesis of *h*. O. Prs. **āvayaka-*, Phl. *χāyak* (GIP. I, ii, 67), Ō. *hanwalk* (*hãwalk*), an egg; Skr. *āma-*, Prs. *χām* (GIP. ib.), Ō. *hām*, unripe; Av. *ašta*, Ō. *hãšt*, eight; Av. *arəša-*, Ō. *hiṇs*, a bear; Skr. *ēḍaka-*, Ō. *hiṛ*, a ram.

(5) Aphaeresis of *h*. Av. *hazaŋra-*, Ō. *zār*, a thousand; Av. *haptāiti-*, Ō. *awāī*, seventy; Av. *haptadasa*, Ō. *awēs*, seventeen; but Ō. *hō*, seven, see No. 1, above.

(6) Syncope of *h*. Av. *χvaŋhar-*, Ō. *χwār*, a sister. Skr. *mahiṣa-*, Ō. *miš*, a buffalo; Av. *māh-*, Ō. *māī*, a month.

(7) From the above we see the very indefinite hold that aspiration possesses in Ōrmuṛī. We also notice this in many pairs of words spelt indifferently with or

without aspiration. Such are *az* or *haz*, I; *hā* or *ā*, he is; *hō* or *ō*, this; *hōn* or *ōn*, this much; and *hãyēk* or *ãyēk*, to remain.

B. PALATALS AND CEREBRAL SPIRANTS.

§ 26. *c*.

(1) This letter is very rare in Ō. An original initial *c* almost always becomes *ʦ*, and an original medial *c* becomes *z* (§ 38, 2), while an original *nc* becomes *nʣ* (§ 32, 5).

(2) As an initial, it has been noted in three words, *cig*, high; *cīw*, a cave; and *cīw*, a roof. The derivation of none of these words is known to me. With *cig* we may compare the Piśāca (Šiṇā) *žīgō*, long. Possibly *cīw*, is not two words, but is one word with two meanings.

(3) As a medial, it occurs only as a palatalization of *k* or *ʦ*, before the plural termination *ī*. Thus, *kwalanak*, a boy, pl. *kwalanacī*; *dūkᵃ*, a girl, pl. *dūcī*; and many others. So *ʦāʦ*, a partridge, pl. *ʦacī*.

§ 27. *j*.

(1) This letter rarely occurs in Ō. An original *j* usually becomes *ʤ*. In one word, Av. *vīsaiti*, Ō. *jīstū*, an original *vī* has become *jī*. It is probably a case of the palatalization of *γ* before *ī*, as also happens in the case of *c* (§ 26, 3). For the origin of the *γ*, see § 14, 2. On the other hand in the case of original *vi*, there is no palatalization, an original initial *vi* becoming *γwa*. In Bal. *gīst*, twenty, the corresponding initial *g* has not been palatalized.

(2) When *ʤ* is followed by *ī* it is palatalized to *j*, as in Ō. *pēnʤ*, five; *panjī-jīstū*, twenty-five.

(3) As in the case of *jīstū* in No. 1 above, the letters *g* and *γ* become palatalized to *j* before the plural termination *ī*. But in this case, the *j* again becomes *ʤ*, so that the grammatical rule is that final *g* and *γ* become *ʤ* in the plural. (§ 32, 3).

§ 28. *š*, *ṣ*.

(1) The letters *š* and *ṣ* are interchangeable in Ō., as in the word *šōr* or *ṣōr*, a city (Prs. *šār*). They are hence considered together (see § 1, Rem. 3).

(2) *š* = original *š*:—

(*a*) Initial:—Skr. *šāli-*, Ō. *šōl*, paddy. This, however is almost certainly borrowed from Wazīrī P., so that no certain examples are available for original initial *š*. Cf. § 31, 3. In other cases an initial Skr. *š* is represented by *s* (§ 37, 2*a*).

(*b*) Medial:—Av. *θwaršti*, Ō. *trāšī*, he cuts; Skr. *rišati*, he tears, Ō. *rasī*, he spins, *raš-tī* or *rōšī*, he causes to spin. For the change of *š* to *s* in *rasī*, cf. Prs. *rēsīdan* or *ріštan*, to spin, and cf. § 37, 2*b*.

(3) *š* = original *z* (*j*), as in Av. *brāzaiti*, Skr. *b'rājatē*, Ō. *brušī*, he shines.

(4) An original *š* becomes *ʦ* in Av. √*vaš-*, Bal. *gwaš-aγ*, to say, Ō. *γwaʦī*, he

says, if the accepted derivation of the Bal. word holds good. But it is simpler to derive the Ō. form from the Av. Skr. √*vac-*. See § 31, 3.

(5) *ṣ* = original Skr. *ṣ*. Skr. *piṣṭa-*, adorned, Ō. *piṣt-ak*, to write; Skr. *mahiṣa-*, Ō. *miṣ*, a buffalo; Skr. √*maṣ-*, Ō. *maṣt-ak*, to break.

(6) *ṣ* (? *š*) = original *ϑy*. Av. √*yaoϑ-*, *yūiϑyeiti*, Ō. *ʒūṣ-ʸēk*, to seek.

(7) *ṣ* = original *rš*, *rs*. Av. *taršti-*, Ō. *tiṣt-ʷēk*, to run away; Av. *caθwarəsata-*, Ō. *ʦāṣtū*, forty.

(8) *š*, *ṣ* = original *χš*. It is in this case that the interchangeability of *š* and *ṣ* is seen most clearly. Cf. § 37, 3.

(*a*) *š*. Av. *aχšaēna-*, green, Ō. *šīn-wū*, potherbs; Av. *χšap-*, Skr. *kṣapā*, Ō. *šīw*, night; Av. *χšvipta-*, Ō. *šippī* or *šīpī*, milk.

(*b*) *ṣ*. Av. *baχšaiti*, Skr. *b'akṣati*, Ō. *baṣī*, he gives; Av. *maχši-*, Skr. *makṣikā*, Ō. *mʷṣī*, a fly; Av. *χšvaš* Skr. *ṣaṣ*, Ō. *ṣʷh*, *ṣō*, six. In each case the corresponding Skr. word has *ṣ*.

(9) *ṣ* = original *fš*. Av. *fšu-pāna-*, Ō. *ṣwān*, a shepherd.

(10) In the word *ṣustak*, to weep, *ṣ* is used instead of *ṣ́*, probably owing to the influence of the following sibilant. (See § 29, 1*c*).

(11) *št* = original *st*, when preceded by a vowel. Thus O. Prs. *ā* + √*stā-*, Ō. *ašt-ʸēk*, to stand. But, if preceded by *s*, *s*+*st* become *st*, as in *wust-ʸēk*, to arise. When initial, *st* become *t*. See § 33, 5.

(12) *ṣt* = original *ṣṭ*. Skr. *pr̥ṣṭa-*, Ō. *paṣtanʷ*, an enquiry; Skr. *piṣta-*, adorned, Ō. *piṣt-ak*, to write; Skr. *b'r̥ṣṭa-*, roasted, Phl. *brišt-an*, Ō. *braṣt-ak*, to burn.

(13) Original *š* also becomes final *h* (§ 25, 2), and (doubtful) *ʦ* (§ 31, 3). *šk* becomes *k* (§ 21, 4); *šm* becomes *m* (§ 20, 2). Indian *šv* becomes *χ* (§ 22, 5).

(14) We have syncope of original *š* in Av. *gaoša-*, Ō. *gōy*, the ear; Av. *maēša-*, Ō. *maī*, a ewe. In both cases, the *š* has become final, and a *y* (*ī*) has been added to compensate for the loss of the palatal *š*. Or the *y* may be a feminine termination. Cf. § 13, 2.

§ 29. *ṣ́*.

(1) This letter is peculiar to Ō. Regarding its pronunciation, see § 1, Rem. 3. It is often written with an *r* preceding it, thus *rṣ́*, as in *mērṣ́* or *mēṣ́*, the sun; but this is only a scribal variation in the method of indicating this difficult sound. It always represents an original compound letter, of which the second member was *r*. The only compound of this kind that is not so represented is *br* (see § 15, 4). Thus:—

(*a*) *ṣ́* = original *kr*. Skr. *krīṇāti*, Ō. *ṣ́īna*, he buys; Skr. *krīta-*, Ō. *ṣ́ī-yēk*, bought.

(*b*) = original *χr*. Av. *sūχra-*, Ō. *sūṣ́*; Phl. *tāχr*, Ō. *tēṣ́*, bitter.

(*c*) = original *gr*. Phl. *grīstan*, to weep, Ō. *ṣ́awa*, he weeps. It is noteworthy that the infinitive and past participle of this verb is *ṣustak*, not *ṣ́ustak*. The simplification is probably due to the difficulty of pronouncing *ṣ́* with a following *s*. Cf. *rāṣ́ai*, for **ṣ́āṣ́ai* or **braṣ́ai*, in § 15, 4. In Skr.

grat'nāti, Ō. *granyī*, a knot, the Ō. word is probably really *grãĩ*, and is borrowed from the Lahndā *girā* or *girã*. In the Persian character the word is written گرنیی.

(*d*) = original *tr*. Av. *vi* + *tərəsaiti*, Skr. *vi* + *trasati*, Ō. *γwaṣa*. he fears. But in words borrowed from India, original *tr* is represented by *ṭ*, as in Skr. *patra-*, Ō. *paṭ*, a leaf (§ 39).

(*e*) = *θr*. Av. *θrayō*, Ō. *ṣ̌ē*, three; Av. *brāθrya-*, Ō. *raṣ̌ai*, a brother's son (see § 15, 4); Av. *miθra-*, Ō. *mēṣ̌* or *mērṣ̌*, the sun. Regarding Av. *caθru-dasa*, Ō. *ṯarēs*, fourteen, see § 15, 4.

(*f*) = *pr*. Skr. *pramṛṣṭa-*, Ō. *ṣ̌amōt*, forgetful; Skr. *prasp'āyatē*, Ō. *ṣ̌as-ʸēk*, to swell; Skr. *prāpayati*, Ō. *ṣ̌awī*, he gives. In Ō. *ṣ̌ī-ṯawa*, he goes, the origin of the prefix is not clear. The *ṯawa* is connected with Av. √*šav-*, Skr. √*cyu-* (see *ṯʸēk* in the vocabulary). With the *ṣ̌ī*, we may compare the P. *prē-*, which H. 191 derives from Av. *upairi-*. Gieger, ELA, 177, is inclined to refer it to Av. *para-*, O. Prs. and Skr. *parā-*. Av. *pairi-* always becomes Ō. *par* or *pra*. See § 40, 2.

(*g*) Original *br* becomes *r* in Ō. *rāṣ̌ai*, a brother's son, and remains unchanged in Ō. *brušī*, he glitters. See § 15, 4.

(*h*) = original *mr*. Skr. *namra-*, Ō. *nōrṣ̌* or *nōṣ̌*, soft.

(*i*) = original *sr*. (?) Skr. *visrāvayati*, Ō. *γwaṣ̌aī*, he washes.

(2) In one case *ṣ̌* = original *rd*. Skr. √*sward-*, to taste, Ō. *χwaṣ̌*, sweet. Ō. *γwarḍī* (Skr. *gardati*, he roars), is evidently borrowed from India.

§ 30. *ž*.

As explained in § 1, Rem. 3, this letter is pronounced exactly like the Persian *ž*. It chiefly occurs in words borrowed from P. The only Ō. instance that I have noted is the verb *daž-ʸēk*, to load. This I connect with the Av. √*darəz-*, to hold firm, Skr. √*d'ṛṣ-*. This would lead us to refer the letter to an original Av. *rz*. *Rz*, the equivalent of the Skr. *ṛj*, is represented by *χ*. See § 22, 3.

C. FRICATIVES.

§ 31. *ṯ*.

(1) This letter represents an original initial *c*. An original medial *c* becomes *z* (§ 38, 2). Phl. *-cak*, Ō. *ṯōī*, a diminutive suffix, as in *mār-ṯōī*, an ant; Av. *caθwār-*, Ō. *ṯār*, four; Av. *cašman-*, Ō. *ṯōm* (pl. *ṯami*), an eye; Av. *ci-*, Ō. *ṯᵃ*, what?; O. Prs. *ciyant-*, Ō. *ṯēn*, what?; Skr. *cūrṇayati*, he pulverises, Ō. *ṯuṇawī*, he sifts. In Phl. *candīnītan*, Ō. *ṯwan-ʸēk*, to shake out dust, a *w* has been inserted (see § 14, 8).

(2) A Skr. *ts* becomes Ō. *ṯ* in Skr. *vatsa-*, Ō. *γwaṯ*, a calf.

(3) Apparently *ṯ* = original *š* in Av. √*vaš-*, Ō. *γwaṯsī*, he speaks, but this is a doubtful case. The original was probably Av. Skr. √*vac-* (see § 28, 4). The difficulty here is that the *c* of √*vac-* is not initial. As for Av. √*šav-*, Skr. √*cyu-*, Ō. *ṯawa*, he goes, the original Indo-European form of the root was *qiẹu-* (Brugmann, *Grundriss*, ii, 916), and the case is really one of a change of initial *c* to *ṯ*. In Ō.

original š appears to be retained (§ 28, 2) when initial, although it must be confessed that only one example, and that a borrowed word, is available.

(4) *ŧō* = original *cva*, as in Av. *cvant-*, Ō. *ŧōn*, how much ?

(5) Original *nc* becomes *nj* or *nʤ* (§ 18, 6).

§ 32. *ʤ*.

(1) *ʤ* = original initial *j*. Original medial *j* becomes *z* (§ 38, 4). Av. √*jan-*, Ō. *ʤana*, he strikes (inf. *ʤ-ōk*) ; Skr. *jānāti*, he knows, Ō. *ʤūna*, he sees (see vocabulary, s.v. *dʸēk*). In Phl. *jūtan*, Ō. *za-yēk*, to chew, an initial *j* has exceptionally become *z*. This is probably really a case of borrowing from Prs. *žāwīdan*. But (§ 38, 4) initial *ʤ* is often pronounced *z*, as in *ʤōk* or *zōk*, to strike ; *ʤut* or *zut*, much. In *ʤūṣī* or *dūṣī*, he seeks, *ʤ* is interchanged with *d* (§ 35, 2).

(2) *ʤ* = original Eranian initial *y*. An original Indian initial *y* remains unchanged (§ 13, 1). Av. √*yā-*, Ō. *ʤa*, he goes, *ʤā-k*, a place ; Av. *yūiδyeiti*, Ō. *ʤūṣī* or *dūṣī*, he seeks (Prs. *justan*).

(3) Before the plural termination *ī*, an Ō. *g* or *ɣ* becomes *ʤ*. Thus, *pṛōng*, a leopard (borrowed from W.P.), pl. *pṛanʤī* ; *maṛyūɣ*, a frog, pl. *maṛyūʤī*, and many others (see § 27, 3).

(4) *ʤ* = original *nj* (Indian *h*) in Av. **vərənja-*, Skr. *vrīhi-*, Ō. *rīʤan*, rice.

(5) An original medial *nc* becomes *nʤ* in Av. *panca*, Ō. *pēnʤ*, five. This *nʤ* becomes *nj* before *ī*, as in Ō. *panjī-jīstū*, twenty-five (§ 27, 2).

(6) *nʤ* = original *nd*; Skr. *gand'a-*, a stink, Ō. *ɣanʤ*, bad. See §§ 18, 7 ; 24, 2. As stated in 18, 7, the change is due to the influence of a lost suffix, such as *ī* or some such palatal letter.

D. DENTALS.

§ 33. *t*.

(1) *t* = original initial *t*. Av. √*tap-*, Ō. *tō-k*, hot ; Av. *taršti-*, Ō. *tiṣtī*, he runs away ; Phl. *tăχr*, Ō. *tēš*, bitter ; Skr. *tāvat*, Ō. *ta*, then ; Av. *tūirya-*, P. *trª*, Ō. *tā*, a paternal uncle ; Av. *tūm*, Ō. *tū*, thou ; Skr. *tarati*, he passes over, Ō. *tar*, elapsed.

In one case, Ō. *dal*, to thee (cf. Prs. *tū-rā*), an initial *t* has apparently become *d*. This is due to the influence of the P. *dar*, from which it is apparently borrowed.

(2) A medial *t* is always syncopated. See No. 6, below.

(3) Final *t* is preserved in Skr. *p'ūt*, Ō. *pūt*, puffed out. Not impossibly, the origin of the Ō. word was some such form as **p'utta-*.

(4) As regards compound letters commencing with *t*, initial *ty* becomes Ō. *t*, as in O. Prs. *tya-*, P. *da*, Ō. *ta*, of, if this derivation is right, see § 59. As for *tr*, it becomes *š* (29, 1*d*), but in the case of words of Indian origin, it becomes *ṭ* (§ 39).

(5) As regards compounds of which *t* is the latter member, original *ršt* is represented by *t*, in Av. *paršti-*, Ō. *pat*, the lower part of the back. Here Ō. agrees with the Piśāca languages. Cf. Bš. *ptī*, the back, Kṣm. *pata-*, behind. Similarly, *rṣṭ* is represented by *t* in Skr. *mārṣṭi*, Ō. *mut-awī*, he rubs. On the other hand *ršt* becomes *št* in Av. *taršti-*, Ō. *tišt-ʸēk*, to run away (§ 28, 7). In the case of O. Prs. √*varšt-*, Ō. *gist-ʸēk*, the Ō. word is borrowed from the Prs. *gaštan*, see § 14, 2.

An original initial *st* = Ō. *st*, in Av. *star-*, Ō. *stirr-ak* (probably *st^{a}r-ak*), a star, but in O Prs. √*stā-*, Ō. *t-^{y}ēk*, to stand, it has become *t*. When the *st* is medial, it is preserved after *s*, *s* + *st* becoming *st*, as in O. Prs. *us* + √*stā-*, Ō. *wust-^{y}ēk*, to stand up. On the other hand, after a vowel, it becomes *št*, as in O. Prs. *ā* + √*stā-*, Ō. *ašt-^{y}ēk*, to stand upright. The Phl. verbal determinative *-st-*, is preserved in the Ō. verb *gla-st-ak*, to transport. See Vocabulary, s.v.

(6) Original medial *t* is syncopated. O. Prs. *duvitīya-*, Ō. *dīm*, second; Av. *navaiti-*, Ō. *nawī*, ninety; Av. *paiti* + √*zan-*, Ō. *pazan-^{y}ēk*, to recognize; Av. *pitar-*, Ō. *piē*, a father; Av. *mātar-*, Ō. *māw^{a}*, a mother; Skr. *šata-*, Ō. *sū*, a hundred; Av. *spaēta-*, Ō. *spīw*, white.

§ 34. *θ*.

This letter no longer exists in Ō. When an original medial, whether alone or forming part of a compound, it is almost always elided. Thus, Av. *maēθman-*, Ō. *mēmnī*, a female guest; Av. *caθwār-*, Ō. *ƀār*, four. The only exception is *θr*, which is represented by *ṣ́*, see § 29, 1*e*. Regarding Av. **caθrudasa*, Ō. *ƀarēs*, fourteen, § 15, 4.

I have not noticed any case of the representation in Ō. of an original initial *θ*.

§ 35. *d*.

(1) *d* = original initial *d*. Av. √*dar-*, Ō. *dranak*, to own, *darī*, he may own; Av. *darəγa-*, Ō. *drāγ*, long; Av. *dasa*, Ō. *das*, ten; Av. √*dāi-*, Ō. *d-^{y}ēk*, to see; Av. √*dā-*, *daδaiti*, Ō. *d-ōk*, made; Av. *dərəta-*, Ō. *dil-ak*, to reap; Av. *duγδar-*, Ō. *dūw^{a}*, a daughter; Av. √**duχš-*, Ō. *dūs-^{y}ēk*, to milk; O. Prs. *duvitīya-*, Ō. *dīm*, second.

(2) *d* = original *y* (through *j*, *ʤ*) in Av. *yūiδyeiti*, Ō. *ʤūṣī*, or *dūṣī*, he seeks.

(3) As to conjuncts of which *d* forms the first member, *d'n* is represented by *n* (§ 18, 5). The examples of the compound *dv* are very inconsistent. Av. *dva*, Ō. *d(y)ō*, two; but Av. *dvadasa*, Skr. *dvādaśa-*, Ō. *dwās*, twelve; while Av. *dvar-*, a door, becomes, as in Kurd., Ō. *bar*.

(4) An original medial *d* suffers syncope. Av. *zərəd-*, Ō. *zlī*, the heart; Av. *aštadasa*, Ō. *aštēs*, eighteen. Similarly, Ō. *dwās*, twelve (see above); *ƀarēs* (*caθrudasa*), fourteen; *awēs* (*haptadasa-*), seventeen, and all the other numerals from twelve to nineteen. But for eleven, we have Av. *aēvandasa* (GIP, I, i, 112), Ō. *sandas*, in which the original *d* is preserved by the *n*. The initial *s* belongs to the Ō. *s^{a}* or *sō*, one, the origin of which is unknown to me.

§ 36. *δ*.

Like *θ*, this letter no longer exists in Ō. An original medial *δ* is always syncopated. Thus, Av. *hiδaiti*, Ō. *hãyī*, he sits; Av. *maδaχā-*, Ō. *mēχ*, a locust; Av. *sarəδa-*, Ō. *sal*, a year; Av. *duγδar-*, Ō. *dūw^{a}*, a daughter. But *δy* becomes *š* in Av. *yūiδyeiti*, Ō. *ʤūṣī* or *dūṣī*, he seeks (see § 28, 6).

§ 37. *s*.

(1) *s* = original *s*:—

(*a*) Initial:—Av. *sarah-*, Ō. *sar*, the head; Av. *sarəδa-*, Ō. *sal*, a year; Skr. *sahyati*, Ō. *say-awī*, he endures; Av. *sukurəna-*, Ō. *sukal*, a porcupine.

(*b*) Medial:—Av. *χvasura-*, Ō. *χsir*, a father-in-law; Av. *dasa*, Ō. *das*, ten; similarly the other numerals up to nineteen; Skr. √*yas-*, Ō. *yas-ʸēk*, to boil. But Skr. *asmi*, Av. *ahmi*, Ō. *hᵃm*, I am (cf. § 25, 3).

(2) *s* = original *š*:—

(*a*) Initial:—Skr. *šikʿā*, a point, Ō. *sūχ-aw-ʸēk*, to prick; Skr. *šata-*, Av. *satəm*, Ō. *sū*, a hundred. In the latter case, the Eranian form has *s*. There is no old Eranian form of the former available, but it also must have had an *s*. Cf. Prs. *sēχ*, Kurd. *sīχī*, Bal. *sīh*. The change therefore, in the case of initials, occurs only in the case of Skr. *š*, corresponding to Eranian *s*, and is really no change at all for an Eranian language like Ō.

(*b*) Medial:—Skr. *triṁšat*, Av. *θrisatəm*, Ō. *ṣīstū*, thirty; Skr. *piṁšatī*, he adorns, Ō. *pisī*, he writes; Skr. *rišati*, he tears, Ō. *raš-t-ī* or *rōšī*, he causes to spin, but *rasī*, he spins (see § 28, 2*b*). Here also the same remarks probably apply, although the old Eranian equivalents of two of the examples are not forthcoming.

(3) In two words, *s* apparently = original *χš*. Av. √**duχš-*, Ō. *dūs-ʸēk*, to milk; Av. √*vaχš-*, Skr. √*vakṣ-*, Ō. *γwāsī*, grass. Ordinarily original *š* is represented by *ṣ* or *š* (see § 28, 8), and these are really borrowed from Prs. *dōšidan* and *wāš*, or some such words, respectively. For the change of *š* to *s* in borrowed words, see § 49.

(4) *syā* = original *cʿāy* in Skr. *cʿāyā*, Ō. *syā-kᵃ*, shade.

(5) As regards original conjuncts of which *s* is the first member, for original *st*, see § 33, 5. For original *ršt*, *rṣṭ*, see the same. For *sp*, see § 40, 5, and for original *spʿ*, see §§ 22, 7; 40, 6.

(6) *s* suffers metathesis in Skr. *spʿāṭayati*, Ō. *χwasrawǐ*, he opens.

(7) *s* has suffered syncope in Av. *tərəsaiti*, Skr. *trasati*, he fears, Ō. *traya*, he shies: *γwaṣa* (*vi* + √*tras-*), he fears.

§ 38. *z*.

(1) *z* = original *z*:—

(*a*) Initial:—Av. *zanu-*, Skr. *hanu-*, Ō. *zēnī*, the chin; Av. √*zar-*, Skr. √*jṝ*, Ō. *zar-kᵃ*, a woman; Av. *zərəd-*, Skr. *hṛdaya-*, Ō. *zlī*, the heart.

(*b*) Medial:—Av. *azəm*, Skr. *aham*, Ō. *az*, I; Av. *paiti* + √*zan-*, Skr. *prati-jñā-*, Ō. *pazan-ʸēk*, to recognize; Av. *hazaṅra-*, Skr. *sahasra-*, Ō. *zār*, a thousand.

(2) *z* = an original medial *c*. An initial *c* becomes *ŧ* (§ 31, 1). Av. √*pac-*, Ō. *bizī*, he cooks (cf. Prs. *pazad*); Av. *raoc-ah-*, Ō. *r(y)ūz*, a day.

(3) Similarly *z* = original *rcy* in Skr. *mṛcyati*, Ō. *maštak*, to be broken, *mazī*, he is broken, if this is the correct derivation (see vocabulary, s.v.). An alternative derivation is Skr. *maṣati*.

(4) *z* = original medial *j*. Original initial *j* becomes *ʤ* (§ 32, 1). Av. *aiwi* + √*jan-*, Skr. *abʿi* + *han-*, Ō. *waz-ʷōk*, to kill; Skr. *bʿṛjjati*, Ō. *brazī*, he roasts. In Phl. *jūtan*, Ō. *za-yēk*, to chew, an initial *j* has apparently become *z*. But the word is borrowed from Prs. *žāwīdan*. An initial *ʤ* is, however, often sounded as *z* (§ 32, 1).

(5) In Av. *brāzaiti*, Skr. *b'rājatē*, Ō. *brušī*, he shines, an original medial *z* (*j*) has exceptionally become *š*. I am unable to account for this.

(6) Regarding original *zm*, see § 20, 2.

E. CEREBRALS.

§ 39. *ṭ*, *ḍ*.

These occur only in words borrowed from India, either directly, or through P^a^ṣtō, and need not detain us. Such are Skr. *patra-*, Ō. *paṭ*, a leaf; Skr. *gardati*, Ō. *γwarḍī*, he roars (§, 47). For *ṛ*, see § 16; and for *ṇ*, see § 19. An original Skr. *ṣṭ*, is represented by Ō. *šṭ*, as in Skr. *piṣṭa-*, adorned, Ō. *pišṭak*, to write (§ 28, 12). An original Skr. *ṭ* is represented by Ō. *ṛ* (§ 16, 3).

F. LABIALS.

§ 40. *p*.

(1) *p* = original *p*. Only initial. Medial *p* becomes *w̄* (§ 11, 3) or *w* (§ 14, 5). Av. √*pac-*, Ō. *paχ-^y^ēk*, to cook; Av. *paθana-*, Ō. *pan*, wide; Av. *panca*, Ō. *pēnč*, five; O. Prs. *parana-*, Ō. *prān*, yesterday; Av. *paršti-*, Ō. *pat*, the upper part of the back; Av. *pitar-*, Ō. *piē*, a father; Skr. *piṣṭa-*, adorned, Ō. *pišṭ-ak*, to write. Geiger (EB. 274, and elsewhere) derives the Bal. (and also Ō.) *pa*, by, from Av. *upa*. But, unless the *u* was dropped at a very early stage, the retention of the medial *p* is impossible in Ō. It is better to follow H. 144, and to refer it to O. Prs. *patiy*, Av. *paiti*, P. Bal, *pa*, Prs. *bad*, *ba*, *bi*. Similarly, Av. *paiti* + √*zan-*, Skr. *prati* + √*jñā-*, Ō. *pazan-^y^ēk*, to recognize. In Skr. *prati* + √*vē-*, *-vayati*, Ō. *pi-yēk*, to string beads, we have the *i* preserved, as in the Prs. *bi*, in order to distinguish the verb from Ō. *pa-yēk*, to graze.

(2) The preposition Av. *pairi*, Skr. *pari*, becomes Ō. *par* or *pr*. Thus Skr. *pari-gud'nāti*, Ō. *par-γūnī*, he dresses himself; Av. *pairi* + √*hic-*, Skr. *pari* + √*sic-*, *-siñcati*, Ō. *prusnawī*, he sprinkles; Skr. *pari* + √*st'ā-*, Ō. *prastī*, he worships; Av. **pairi* + √*vaχš-*, Ō. *praw-ak*, to sell; Av. **pairi* + √*dā-*, Ō. *pra-yēk*, to beat.

(3) *p* = original initial *p'* in Skr. *p'ūt*, Ō. *pūt*, puffed out (§ 33, 3).

(4) *p* = original initial *m* in Prs. *maska*, Ō. *pisk*, butter; Prs. *māc*, P. *maca*, Ō. *paṣ*, a kiss.

(5) *sp* = original *sp*:—

(*a*) Initial:—Av. *spaēta-*, Ō. *spīw*, white; Medic σπάκα, Av. *span-*, Ō. *spuk*, a dog.

(*b*) Medial:—Av. *aspa-*, O. *yāsp*, a horse.

(6) But original *sp'* is represented in Ō. by *χw* (§ 14, 6).

(7) As already stated, medial *p* becomes *w̄* or *w* (§§ 11, 3; 14, 5). So also medial *pt* and *fn* (*pn*) (§ 14, 6). Initial *fš*(*pš*) becomes *š* (§ 28, 9). But in Av. *χšvipta-*, Ō. *šippī*, or *šūpī*, milk, *pt* has become *pp* or *p* (§ 14, 6).

§ 41. *b*.

(1) *b* = original *b*. Only initial. No instances of original medial *b* have been noted. Av. *baχšaiti*, Ō. *bašī*, he gives; Av. *bavaiti*, he becomes, Ō. *bi-yōk*, to be; Av. *baoiši-*, Ō. *bũy*, a scent; Av. *būmi-*, Ō. *būmm^a^*, the earth.

(2) Regarding Av. √*bar-*, Ō. *wri-yōk*, see § 14, 7. Regarding Av. *dvar-*, Ō. and Kurd. *bar*, a door, see § 35, 3.

(3) In the case of Av. Skr. √*pac-*, Ō. *paχ-ʾēk*, to cook, the change of initial *p* to *b* in the Ō. present stem *bizī*, he cooks, is difficult to explain. Comparison with Phl. *pazēm*, Prs. *pazam*, Kurd. *bĕ-piž*, etc., shows that it is very probable that this change really has taken place, and that it is not an instance of the adoption of a different stem for the present base. Possibly, there may have been conflux with Skr. *b'ṛjjati*, he roasts, Ō. *braštak*, *brazī*.

(4) Initial *br* = original *br*, *b'r*, in Av. *brāzaiti*, Skr. *b'rājatē*, Ō. *brušī*, he glitters. Skr. √*b'rajj-*, *b'ṛjjati*, he roasts, Ō. *brazī*, he burns. An exception is Av. **brāθrya-*, Ō. *rāšai*, a brother's son, in which the initial *br* is represented by *r*. See §§ 15, 4; 29, 1 and 1g.

(5) Original *mb* is represented by Ō. *m* (§ 20, 2).

§ 42. General View of Vowel and Consonant Changes.

Eranian.	Indian.	Ōrmuṛī.			Remarks.
		Initial.	Medial.	Final.	
a	..	*a*, 3, 1 aphæresis, 3, 7	*ᵃ*, 2, 1 *a*, 3, 1 *ā*, 4, 2 *i*, *ē*, 5, 2; 6, 2; 9, 3, 4 *u*, *ō*, *w*, 7, 2; 11, 3 syncope, 3, 8. nasalized, 3, 10; 4, 4	*a*, 3, 9 .. .. .. apocope, 3, 9	followed or preceded by *r*. under influence of neighbouring palatal or *r*. under influence of neighbouring labial.
ā	..	*a*, 3, 2	*ā*, 4, 1	*ᵃ*, 2, 2	
ē	..	..	..	*a*, 3, 5	preceded by guttural.
ə	..	..	*i*, 5, 3; 6, 3 syncope, 9, 6	..	under influence of *r*.
i	..	..	*i*, 5, 1 *a*, 3, 3	.. ..	in preposition *nis*.
ī	..	..	*ī*, 6, 1	..	
u	..	*wu*, 7, 4	*u*, 7, 1 *a*, 3, 4 syncope, 7, 5	.. ..	after guttural.
ū	..	..	*ū*, 8, 1	..	
	ū	..	*u*, 7, 3	..	

Eranian.	Indian.	Ōrmuṛī.			Remarks.
		Initial.	Medial.	Final.	
	ɣ, *ɣ̄*	..	*ir*, *ar*, *r*, 5, 4; 15, 2	..	
ai	..	..	*a*, 3, 6 syncope, 10, 2	..	
iya, *uya*	..	..	*ē*, 9, 2	..	
ao	..	..	*ō*, 11, 1	..	
k	..	*k*, 21, 1	*k*, 21, 1	..	
		g, 21, 2	..	..	only in two interrogative words.
	kʿ	..	*χ*, 22, 2	..	
	kr	*ṣ̌*, 29, 1*a*	..	..	
	kṣ	*ṣ̌*, 28, 8	*ṣ̌*, 28, 8	..	
g	..	*g*, 23, 1	..	..	
	g	*γ*, 23, 1; 24, 1	*γ*, 23, 1; 24, 1	..	
gr	..	*ṣ̌*, 29, 1*c*	..	..	
	gr	*gr*, 15, 4; 29, 1*c*	..	..	probably borrowed.
χ	..	*χ*, 22, 1	*χ*22, 1	..	
χr	..	..	..	*ṣ̌*, 29, 1*b*	
χš	..	*š*, *ṣ̌*, 28, 8	*š*, *ṣ̌*, 28, 8	..	
γ	..	..	*γ*, 23, 2; 24, 1	..	
			g, 23, 2.	..	only in one word.
γn	..	..	*n*, 18, 4; 24, 5	..	
γδ	..	..	syncope, 24, 6; 36	..	
c	..	*ʦ*, 31, 1	*z*, 38, 2	..	
cva	..	*ʦō*, 31, 4	..	..	
	cʿāy	*syā*, 37, 4	..	..	
j	..	*ʣ*, 32, 1	*z*, 38, 4	..	
t	..	*t*, 33, 1	syncope, 33, 6	..	
	t(?*tt*)	..	..	*t*, 33, 3	
ty	..	*t*, 33, 4	..	..	
tr	..	..	*ṭ̌*, 29, 1*d*	..	
	tr	..	*ṭ*, 29, 1*d*; 39.	..	
	ts	..	*ʦ*, 31, 1	..	
d	..	*d*, 35, 1	syncope, 35, 4	..	
dva	..	*dwa*, *d*(*y*)*ō*, *ba*, 14, 4; 35, 3.	..	..	

Eranian.	Indian.	Ōrmuṛī.			Remarks.
		Initial.	Medial.	Final.	
θ	..	..	syncope, 34	..	
θw	..	..	syncope, 14, 9	..	
θr	..	*ṣ̌*. 29, 1*e*	*ṣ̌*, 29, 1 *e*; *r*, 15, 4	*ṣ̌*, 29, 1*e*.	
δ	..	..	syncope, 36	..	
δy	..	..	*š* (? *š*), 28, 6; 36	..	
	d'n	..	*n*, 18, 5; 35, 3.		
	ṭ	..	*ṛ*, 16, 3	..	
p	..	*p*, 40, 1	*ō*, *w*, 11, 3; 14, 5; 40, 7	..	
		b, 41, 3	..	..	in one word.
pt	..	..	*w*, 14, 6	..	
	pn	..	*w*, 14, 6	..	
	pr	*ṣ̌*. 29, 1*f*.	..	..	
b	..	*b*, 41, 1	..	..	
br	..	*br*, 15, 4; 41, 4 *r*, 15, 4	..	..	
fn	*pn*	..	*w*, 14, 6	..	
fš	..	*š*, 28, 9	..	..	
	p'	*p*, 40, 3	..	..	
	b'r	*br*, 15, 4; 41, 4	..	..	
n	..	*n*, 18, 1	*n*, 18, 1	..	
nc	..	..	*nc̣*, 18, 6; 32, 5	..	
			nj, 18, 6; 32, 5	..	before palatals.
nj	*h*	..	*c̣*, 32, 4	..	
nt	..	..	*n*, 18, 2	..	
nd	..	..	*n*, 18, 3 *nd*, 35, 4	..	
m	..	*m*, 20, 1 *p*, 40, 4	*m*, 20, 1	..	
	mb	..	*m*, 20, 2	..	
	mr	..	*ṣ̌*, 29, 1*h*.	..	
y	..	*c̣*, 32, 2; 35, 2 *d*, 35, 2	see *iya*, *uya*	..	*c̣* or *d* optional, 35, 2

Eranian.	Indian.	Ōrmuṛī. Initial.	Ōrmuṛī. Medial.	Ōrmuṛī. Final.	Remarks.
	y	*y*, 13, 1; 32, 2	..	..	
v, *w*	..	..	*w*, 14, 1 syncope, 14, 9	..	
va, *vi*	..	*γwa*, 14, 2	..	..	
wa	..	..	..	*ū*, 8, 4	
vā	..	*γō*, 14, 2	..	..	
vī	..	*jī*, 14, 2; 27, 1	..	..	
	vr	*r*, 15, 4(?)	..	..	
r	*r*	*r*, 15, 1	*r*, 15, 1	..	
r	*l*	*l*, 17, 1	..	..	
r	..	..	syncope, 15, 6	apocope, 15, 7	
rt, *rd*, *rθ*, *rδ*, *rn*	..	..	*l*, 17, 3	..	
	rcy	..	*z*, 38, 3	..	
	rt	..	*ṛ*, 16, 1	..	
	rd	..	*ṝ*, 29, 2;	..	
	rṇ	..	*ṇ*, 19, 2	..	
rs	..	..	*ṣ*, 28, 7	..	
rz	*ṛṣ*	..	*ž*, 22, 3; 30	..	
rz	*rj*	..	*ɣ*, 22, 3; 30	..	
rš	..	..	*ṣ*, 28, 7; *ṇs* or *ṛs*. 19, 3.	..	
ršt	..	..	*t*, 33, 5 *šṭ*, 33, 5	..	
	rṣṭ	..	*t*, 33, 5	..	
	l	*l*, 17, 1	..	..	
		n, 18, 2	..	..	one case.
s	..	*s*, 37, 1	*s*, 37, 1 syncope, 37, 7	..	
st	..	*st*, *t*, 33, 5	..	..	in each case, a single example.
			šṭ, 28, 11; 33, 5	..	if preceded by vowel.
sst	..	..	*st*, 33, 5	..	
sp	..	*sp*, 40, 5	*sp*, 40, 5	..	
	sp'	*χʷ*, 14, 6; 22, 7; 40, 6	..	..	
sr	..	..	*ṝ*, 29, 1*i*	..	
	sv (Av. *χv*)	*χʷ*, 14, 3; 22, 6	..	..	

Eranian.	Indian.	Ōrmuṛī.			Remarks.
		Initial.	Medial.	Final.	
z	..	*z*, 38, 1	*z*, 38, 1	..	
z	*j*	..	*š*, 28, 3; 38, 5	..	one instance.
š	..	*š*, 28, 2	*š*, 28, 2	..	
			χ, 22, 4	..	one instance.
				h, 25, 2	one instance.
			syncope, 13, 2; 28, 14		or *š* has become *y* (?).
šk	..	..	*k*, 21, 4	..	
šm	..	..	*m*, 20, 2	..	
	š (Er. *s*)	*s*, 37, 2	*s*, 37, 2		
	ṣ	..	*ṣ*, 28, 5	..	
	ṣt	..	*ṣt*, 28, 12	..	
h	..	*h*, 25, 1 aphæresis, 25, 5	..	..	
	hy	..	*y*, 13, 1	..	
χᵛ	*sv*	*χʷ*, 14, 3; 22, 6	..	..	
	šv	*χ*, 22, 5	..	..	

For other vowel-changes, see § 12.

§ 43. Other Consonant changes:—

(1) Aphæresis of:—*h*, 25, 5.

(2) Syncope of:—*γδ*, 24, 6; 36; *t*, 33, 6; *d*, 35, 4; *θ*, 34; *θw*, 14, 9; *δ*, 36 *v*, 14, 9; *r*, 15, 6; *s*, 37, 7; *š*, 28, 14 (cf. No. 7, below); *h*, 25, 6.

(3) Apocope of:—*r*, 15, 7.

(4) Prothesis of:—*γ*, 24, 3; *j*, 27, 1; *y*, 13, 3; *w*, 7, 4; *h*, 25, 4.

(5) Insertion of:—*y* (before long vowel), 13 4; *w*, 14, 8; *l*, 17, 4.

(6) Metathesis of:—*r* (Ō. *rāχᵃ*, truth), 15, 1*b*; *s*, 37, 6.

(7) Vocalization:—*p* > *ō*, *w*, 11, 3; 13, 3; 14, 5, 6; *wa* > *ū*, 8, 4; *š* > *y* (*ī*), 28, 15 (cf. No. 2, above).

APPENDIX.

ON LOAN-WORDS IN ŌRMUṚÎ.

§ 44. Ōrmuṛī chiefly borrows from P[a]ṣtō and Persian. In fact the greater part of its vocabulary is drawn from one or other of these two languages. The Persian loan-words are sometimes borrowed directly, and sometimes come through P[a]ṣtō, in the latter case after receiving the colouring of that form of speech. Words are also occasionally borrowed from Indian languages and from Balōcī.

§ 45. The Ōrmuṛs dwell in the heart of Wazīristān, and it is hence natural that most of the words borrowed from or through P[a]ṣtō are in forms used in the Wazīrī dialect of that language, which often differ from those found in the dictionaries.

The following are the main points of phonetics in which Wazīrī P[a]ṣtō differs from the standard P[a]ṣtō of Pēšāwar. Most of them are taken from p. ii of the late Mr. J. G. Lorimer's *Grammar and Vocabulary of Wazīrī Pashto*. No mention is made of the general points of difference between North-Eastern and South-Western P[a]ṣtō, such as N.E. *x́*, S.W. *x̌*; N.E. *ġ*, S.W. *ǧ́*, as these are well known, and Wazīrī is only one of many South-Western dialects, all of which have these same peculiarities.

Pēšāwar P[a]ṣtō.	Wazīrī P[a]ṣtō.
[a], as in *wṛ[a]l*, to carry.	*e*, as in *wṛel*, to carry.
ā, as in *γāx́* (S.W. *γāx̌*), a tooth.	*ō*, as in *γwōx̌*, a tooth.
ū, as in *špūn*, a shepherd.	*ü*, or *ī*, as in *špün* or *špīn*, a shepherd.
ō, as in *ōb[a]*, water.	*ē*, as in *ēbö* (f. pl.), water.
b, as in *bēgā*, evening.	*w*, as in *wēgā*, evening.
m, as in *mēlm[a]*, a guest.	*w*, as in *wulma*, a guest.
n, as in *nγarai*, a fireplace.	*l*, as in *lγarai*, a fireplace.
w, as in *nwar*, the sun.	*y*, as in *myär* or *lmär*, the sun.

Wazīrī is also fond of inserting a *w* after a guttural letter, as in P. *kuṇḍa*, Wazīrī *kwuṇḍa*, a widow; and Wazīrī *γwōx̌*, a tooth, quoted above. It often also inserts *y* before a long vowel, as in P. *lār*, Wazīrī, *lyār*, a road.

In the following sections P. stands for standard South-Western P[a]ṣtō; WP. for Wazīrī P[a]ṣtō: Ō. for Ōrmuṛī: Bal. for Balōcī: and Prs. for Persian.

§ 46. Ō. sometimes shortens *ā* in borrowed words, as in P. *γāx̌*, Ō. *gas*, a tooth; Prs. suffix *-nāk*, Ō. *-nak*, see *aχwara-nak* in Vocab.

In Ō. we often find a borrowed *ā* represented by *ō*, as in WP. Thus, Prs. *šār*, Ō. *šōr*, a city; P. *maṛistān*, Ō. *maṛistōn*, a cemetery, and many others.

In one case, we have a P. *ī* represented by Ō. *ū*. P. *sīχ-[a]l*, Ō. *sūχ-aw-[y]ēk*, to prick. This is the reverse of the WP. custom.

As in WP. *ō* becomes *ē*, in P. *ǰōṭa*, Ō. *zēṭ[a]*, a cow buffalo. On the other hand,

the *ō* is preserved in P. *šōla*, WP. *šēlē*, Ō. *šōl*, paddy. In this case, as we see from the Skr. *šāli-*, the *ō* represents an original *ā*.

§ 47. As regards semi-vowels, liquids and nasals:—We have seen above that WP. inserts *y* before a long vowel. Another example is P. *māšai*, WP. *myāsai*, a mosquito. When the latter is borrowed by Ō. it takes the form *myāsī*. This tendency to insert *y* before a long vowel is carried to considerable lengths in Ō., as is shown in § 13, 4.

WP. is also fond of inserting *w* after a guttural (§ 45). So, we have P. *γaṭ*, WP. *γwuṭ*, Ō. *γwaṭ*, fat; P. *γar-ēdᵃl*, to roar, WP. *γwuṛa*, boasting, Ō. *γwarḍ-ʸēk*, to roar.

We have seen in § 45 that P. *m* is liable to become WP. *w*. In P. *āwr-ēd-ᵃl*, Ō. *amar-ʸek*, to hear, the reverse process has taken place.

P. *ṛ*, Prs. *rd* is often represented by *ṛd* in Ō. Thus, P. *sāṛa*, Prs *sardī*, Ō. *saṛdī*, coldness; P. *γāṛa*, Prs. *gardan*, Ō. *gaṛdan*, the neck. This enables us to account for the *rḍ* in Ō. *γwarḍ-ʸēk*, to roar, compared with P. *γar-ēd-ᵃl*, *γuṛumb-ēd-ᵃl*, although the dictionaries give no P. form with which we can directly compare it. The difference between *rḍ* and *ṛd* is very slight, and might almost be called a mere variety of spelling.

We have a change of *r* to *l* in P. *dar*, Ō. *dal*, to thee (cf. § 33, 1).

Finally, a P. initial *ṛ* has become *h* in P. *ṛūnd*, Ō. *hōnd*, blind.

§ 48. As regards gutturals:—We have one apparent instance of a P. medial *k* becoming *g*, in P. *zižkai*, Ō. *sīzgai*, a porcupine. The termination *kai* is a P. diminutive suffix, and in that language often becomes *gai* (Trumpp, p. 50), so that the change probably took place before the word was borrowed.

A P. initial *γ* often becomes Ō. *g*. Thus, P. *γaṛ-ᵃl*, Ō. *gal-ʸēk*, to twist; P. *γāš*, Ō. *gas*, a tooth; P. *γwā*, WP. *γwō*, Ō. *giyōy*, a cow; P. *γanam*, Ō. *gunum*, wheat.

§ 49. As regards palatals:—A palatal *š* in a borrowed word generally becomes *s*. Thus, Prs. *šūrbā*, Ō. *sirwā*, soup; P. *šiga*, Ō. *sagᵃ*, sand; Prs. *šamba*, Ō. *samba*, Saturday; Prs. *šamāχa*, Ō. *samāχᵃ*, panicum frumentaceum; Bal. *šarr*, Ō. *sir*, good; P. *māšai*, Ō. *myāsī*, a mosquito; Prs. *dōš-īdan*, Ō. *dūs-ʸēk*, to milk (§ 37, 3); Prs. *gašt-an*, Ō. *gist-ʸēk*, to turn (§ 33, 5); Prs. *šudan*, O. *syōk*, to become. In a few cases the *š* is retained, as in Prs. *šār*, Ō. *šōr*, a city; P. *šōla*, Ō. *šōl*, paddy.

Similarly, P. *ṣ* becomes *s* in P. *wāṣᵃ*, Ō. *γwāsī*, grass (§ 37, 3); P. *γāṣ*, Ō. *gas*, a tooth.

Similarly, *ž* and *ẓ* become *z* in P. *žōbal*, Ō. *zōbal*, wounded; Prs. *žāwīdan*, Ō. *zayēk* (§ 38, 4), to chew; P. *žwandai*, Ō. *zwandai*, alive; P. *zižkai*, Ō. *sīzgai*, a porcupine.

§ 50. The only example that need be given of fricatives is P. *ǰōṭa*, WP. *ʤēṭa*, Ō. *zēṭᵃ*, a buffalo calf. Here WP. initial *ʤ* has become *z*.

§ 51. As regards dentals:—We may note the Ō. word *dist* (or *dᵃst*, see § 1, Rem. 1), a hand. The initial *d* shows that the word has been borrowed from Prs. *dast*, and not from P. *lās*. The P. change of *t*, *d*, to *l* never occurs in Ō.

A Prs. initial *z*, P. initial *ž*, becomes Ō. *ʤ* in Prs. *zār-īdan*, P. *žaṛ-ᵃl*, Ō. *ʤaur-ʸēk*; to be annoyed. On the other hand, initial P. *z* becomes Ō. *s* in P. *zižkai*, Ō. *sīzgai*, a porcupine.

§ 52. As regards labials:—We have the WP. change of *b* to *w* in Prs. *āb-rīz*, Ō. *āw-rīz*, a privy; Prs. *bēgāh*, P. *bēgā*, WP. Ō. *wēgā*, evening.

In two exceptional cases we have Prs. initial *b* becoming Ō. *p*, viz. Prs. *bān*, a house, Ō. *pōn*, a roof; Prs. *baṭak*, Ō. *patakk*^{a}, a duck.

§ 53. Long vowels in borrowed words are occasionally nasalized, as in Prs. *būē*, Ō. *bũy*, a smell.

A BRIEF SKETCH OF ŌRMUṚĪ GRAMMAR.

§ 54. This sketch does not pretend to be more than an outline of the main facts of Ōrmuṛī accidence. A complete grammar will be given in the ninth volume of the Linguistic Survey of India.

Ōrmuṛī does not possess a written character of its own. It has all the sounds used by Pᵃšṭō, and the Pᵃšṭō alphabet is sometimes used for writing it. The Pᵃšṭō letters ښ and ږ are pronounced as in the South-Western dialect of that language; that is to say ښ is sounded something like χš and is transliterated š, and ږ is sounded like a Persian ژ and is transliterated ž. The χ- and ġ-sounds used respectively for these letters in North-Eastern Pᵃšṭō are not found in Ōrmuṛī in connexion with them.

Ōrmuṛī has one peculiar consonant of its own, the sound of which is said to approach that of a compound of χ, š, and *r*, or of the Pᵃšṭō ښ and ړ. It is transcribed in these pages by the special sign ᵴ. Ghulām Muḥammad Khān represents it by the sign ښر in the Persian writing of his Grammar. This sound represents an original compound letter of which the second member was *r*, whether *kr*, *χr*, *gr*, *tr*, *θr*, *pr*, *mr*, or *sr*. The only compound of this nature that it does not seem to represent is *br* (§ 29).

As regards vowels, attention may be drawn to the *Fatḥa-ĕ-Afγānī*, so common in Pᵃšṭō, and occurring in that word itself. It appears very frequently in Ōrmuṛī, and is transliterated by ᵃ.

The system of transliteration adopted in these pages for other letters will be found on pp. xiii ff.

Nouns Substantive—

§ 55. *The Article.*—There is a definite article, *a-*, which may be prefixed to any common noun. Thus, *a-saṛai*, the man. It is not prefixed to any noun of which the meaning is already definite, such as a proper name or a personal pronoun. It is probably a by-form of the demonstrative pronoun *hā* or *ā*, this.

There is no real indefinite article. The numeral *sō*, one, and the indefinite pronouns *kuk*, anyone, and *šᵃ*, anything, are often used to supply its place.

56. *Gender.*—There are two genders, masculine and feminine. Most nouns indicating inanimate objects are masculine but there are many exceptions. Nouns ending in *ai* are, as in P., masculine (see GIP. I, ii, 210), and those in ᵃ (derived from original *ā*, and equivalent to P. *a*) and *ā* are feminine. Most nouns ending in a consonant are masculine, and most of those ending in *ī* or *ū* are feminine.

§ 57. *Number.*—There are two numbers, singular and plural. The sign of the plural is *ī*. Thus, *gaṗ*, a stone, pl. *gaṗī*; *wᵃnᵃ*, a tree, pl. *wᵃnᵃī*. The masculine termination *ai* becomes *aī*, as in *saṛai* a man, pl. *saṛaī*.

If a noun ends in a consonant preceded by *ā*, the *ā* is generally shortened and the consonant doubled before the plural termination, as in *bāzār*, a market, pl. *bāzarrī*. Other long vowels are also liable to changes. Thus :—

ƚōm, an eye,	pl. *ƚamī*.
šōr, a city,	pl. *šērī*.
injīr, a fig,	pl. *injᵃrī*.
syūγ, a grape,	pl. *saγī*.
syūγ, a mother-in-law,	pl. *saγadī*.
zēš̡, a thorn,	pl. *zaš̡š̡ī*.

In some of these, e.g. in *ƚamī*, eyes, it is in the plural that the original vowel is preserved (cf. Av. *cašman-*), and the *ō* of *ƚōm* is due to epenthesis caused by some lost singular termination, such as *u* or *ō*. In *šōr* (Prs. *šār*), a city, on the other hand, the change of *ā* to *ō* is due to the influence of the neighbouring Wazīrī Pᵃšṭō, and the plural is formed from the original *šār*, the *ā* becoming *ē* under the epenthetic influence of the following *ī*.

This final *ī* has also an epenthetic effect on certain final consonants. Thus a final *k* is palatalized to *c*, as in *panḍūk*, a pomegranate, pl. *panḍūcī*; *dūkᵃ*, a girl, pl. *dūcī*. Similarly *ƚ* becomes *c* in *ƚāƚ*, a partridge, pl. *ƚacī* (? *ƚaccī*), while *g* and *γ* become *ǵ*, as in *ping*, a cock, pl. *pinǵī*; *kṛāγ*, a crow, pl. *kṛaǵī*.

The origin of the plural termination *ī* is the Phl. *īhā*; which has also survived in the Prs. and Kurd. *hā* (GIP. I, ii, 106). The *ī*, however, does not appear in any other Eranian dialect.

§ 58. *Declension.*—Ōrmuṛī agrees with Persian and with Gabrī, and differs from other modern Eranian forms of speech, in having no oblique case for nouns substantive. The noun remains unchanged throughout declension. The only exception is that *a* or *ā* is added to masculine nouns, and *i* or *ē* is added to feminine nouns, to form a vocative. Some pronouns, however, have oblique cases, and relics of the oblique case have survived in certain adverbs, in which it ends in *ᵃ*. Thus :—

bēž̡, the place above,	*pa-bēž̡ᵃ*, upwards.
nīšt, the place outside,	*i-nīštᵃ*, outside.
muχ, the front,	*i-muχᵃ*, before.
pēƚ, the rear,	*i-pēƚᵃ*, behind.
and others.	

As for the noun substantive, the nearest approach to what we may call cases is formed by prepositions, viz. :—

pa, by, forms an Instrumental (but not an Agent).
ta, of, forms a Genitive.
i or *kū*, on, forms a Locative.

We thus decline *saṛai*, a man, as follows :—

	Sing.	Plur.
Nom. ..	*saṛai*,	*saṛaī*.
Instr. ..	*pa-saṛai*,	*pa-saṛaī*.
Gen. ..	*ta-saṛai*,	*ta-saṛaī*.

	Sing.	Plur.
Loc. ..	*i-saṛai*,	*i-saṛaī*.
Voc. ..	*wō-saṛaiă*,	*wō saṛaiă*.

There is no special form for the case of the Agent, used for the subject of the past tenses of transitive verbs. The Agent in such cases is the same in form as the nominative.

§ 59. As regards the above prepositions, *ṗa* corresponds to P. and Bal. *pa*, Prs. *bad*, *ba*, *bi*, O. Prs. *patiy*, Av. *paiti*. See § 40, 1.

The preposition *ta* takes the form *tar* before the pronouns of the first and second persons, and before certain interrogative pronouns. Thus, *tar-mun*, of me; *tar-tū*, of thee; *tar-kuk*, of whom? It seems to correspond to Kurd. *dĕ*, P. *da*, which Geiger (ELA. 23) derives from O. Prs. *tya-*. But the form *tar* stands in the way of this, and I am inclined to suggest that, as in the case of *i* (see below), there has been an interchange of the functions of the locative and genitive prepositions. Just as the Ōrmuṛī *i*, the preposition of the locative is to be connected with the Persian genitive preposition *i*, *ĕ*, so the Ōrmuṛī genitive preposition *tar*, *ta*, is to be connected with the Persian locative preposition *(an)dar*, *dar* (GIP. I, ii, 161). It is thus derived from O. Prs. *a(n)tar*, Av. *antarə*.

In the same way, I connect the preposition *i*, on, with the Prs. *kasra-ĕ-iẓāfat* or preposition of the genitive, *i*, *ĕ*, of.

If the noun is a proper name of a person, or is a substantive pronoun referring to a person, *ku* or *kū* is used for the locative instead of *i*. This preposition seems to be of Indian origin, and to be connected with the Skr. *kṛta-*; Hn. *kā*, of; *kō*, to. Here we have another instance of a genitival word being used to indicate the locative. Cf. also Sq. *cü*, on.

§ 60. Other case-relations are indicated with the aid of postpositions, which govern either the genitive or the locative.

The following govern the genitive:—

pār^{a}, for, as in *ta-saṛai pār*^{a}, for a man.
inēl^{a}, in possession of, as in *ta-saṛai inēl*^{a}, in possession of a man.

The following govern the locative:—

kī or *likī*, to, as in *i-saṛai kī* (or *likī*), to a man. This forms a dative.
lāst^{a} or *lāst*^{a} *dī*, from, as in *i-saṛai lāst*^{a}, from a man. This forms an ablative.

So, *inar*, in; *izar*, on; *gaḍ*, together with, and others. The connexions of these with other Eranian languages are given, so far as I have been able to ascertain them, in the vocabulary.

§ 61. Adjectives.—Some adjectives do not change for gender or number, while others do so change. Examples of immutable adjectives are:—

ārat, wide.	*landḍ*, short.
ɣandk, bad.	*stiṛ*, weary.
χiṛ, drab-coloured.	*tōk*, hot.

Mutable adjectives generally form their feminines by adding the feminine termination ^{a}, as in *spīw*, white, fem. *spīw^a*. They form their plural in one of two ways. With some, the plural is the same as the feminine singular. Thus, the plural of *spīw* is *spīw^a*. Others form the plural in the manner prescribed for substantives. Thus, *hōnd*, blind, fem. sing. *hōnd^a*, plur. *hēndī*. In the plural there is no distinction between masculine and feminine.

Except that the plural is of common gender, none of the above rules apply to past participles. These will be dealt with in §§ 77, 78 and 86.

§ 62. *Comparison*.—Comparison is generally effected by putting the noun with which comparison is made into the ablative case, with the postposition *lāst^a*, as in *i-ṣustak lāst^a dī a-ṣabr sir hā*, patience is better than weeping; *i-harr^a lāst^a dī sir hā*, it is better than all, i.e. it is best.

§ 63. *Numerals*.—These are:—

Cardinals.	Ordinals.
1. *sō* or *s^a*, fem. *syī*.	*awwal* or *i-muχ^a*.
2. *dyō*.	*dīm*.
3. *ṣ̌ē*.	*ṣ̌aim*.
4. *ƀār*.	*ƀār^{a}m*.
5. *pēnƀ*.	*panƀam*.
6. *ṣ̌^{a}h*.	*ṣ̌^{a}ham*.
7. *hō*.	*hōm*.
8. *hāšt*.	*haštam*.
9. *n^{a}h*.	*n^{a}ham*.
10. *das*.	*dasam*.
11. *sandas*.	*sandasam*.
12. *dwās*.	*dwāsam*, and so on.
13. *ṣ̌ēs*.	
14. *ƀarēs*.	Cardinals.—*Contd*.
15. *panƀēs*.	29. *nō-jīstū*, and so on in the other decads.
16. *ṣuwēs*.	
17. *awēs*.	30. *ṣ̌īstū*.
18. *aštēs*.	40. *ƀāṣ̌tū*.
19. *unēs*.	50. *panƀāṣ̌tū*.
20. *jīstū*.	60. *ṣwaiṣ̌tī*.
21. *sō-jīstū*.	70. *awāī*.
22. *dū-jīstū*.	80. *haštāī*.
23. *ṣ̌īw-jīstū*.	90. *nawī*.
24. *ƀarī-jīstū*.	100. *sū*.
25. *panjī-jīstū*.	200. *dū sōh*.
26. *ṣ̌ō-jīstū*.	300. *ṣ̌ē sōh*.
27. *hō-jīstū*.	400. *ƀār sōh*, and so on.
28. *haštī-jīstū*.	1000. *zār*.

The derivations of the above will be found in the vocabulary. I do not know the derivation of *sō*, one. It may have a pronominal origin, and be connected with *sa-*, that. It is the only numeral that changes for gender.

PRONOUNS.—

§ 64. *Personal Pronouns.*—The pronoun of the first person has, exceptionally, an oblique form in the singular, the nominative being *az* or *haz*, and the oblique singular *mun*. The pronouns of the first and second persons take *tar*, not *ta*, as the preposition of the genitive (see § 59), and, as they refer to persons, they take *ku* or *kū*, not *i*, in the locative (*ib.*). We thus get the following declensions:—

	I.	Thou.
Sing.		
Nom.	*az* or *haz*.	*tū*.
Instr.	*pa-mun*.	*pa-tū*.
Gen.	*tar-mun*.	*tar-tū*.
Loc.	*kū-mun*.	*kū-tū*.
Plur.		
Nom.	*māχ*.	*tyūs* or *tyūz*.
Instr.	*pa-māχ*.	*pa-tyūs* (*tyūz*).
Gen.	*tar-māχ*.	*tar-tyūs* (*tyūz*).
Loc.	*kū-māχ*.	*kū-tyūs* (*tyūz*).

The origins of these forms will be found in the vocabulary. Here we may point out the parallels:—

Kurd. *az*: Prs. *man*, Kurd. (suffix) *min*; Old Bal. and M. *māχ*, Š. *māš*; O. Prs. *amāχam*, but Av. *ahmākəm*.

Prs. *tū*, Kurd. *tu*, *tü*, but P. *ta*. For the plural the original forms are probably *tūs*, *tūz*, as Ō. commonly inserts a *y* before a long vowel (§ 13, 4). The nearest Eranian forms to this are P. *tāsē*, *tāsū*, you, the origin of which is obscure (GIP. I, ii, 217). With *tyūz*, we may perhaps compare P. *mūž*, we, the origin of which is also unknown. Much nearer is the Panjābī *tusī*, and the Maiyā (Piśāca) *tus*, you.

§ 65. Relics of the third personal pronoun survive in the contracted pronouns *(h)al*, to him; *wi* or *wa*, on him; and *dī*, from him, which will be dealt with in the next section. Usually the demonstrative pronouns perform the office of pronouns of the third person.

§ 66. *Contracted Pronouns.*—These are:—

	First Person.	Second Person.	Third Person.
Dat.	*hir* or *rī*, to me, to us.	*dal*, to thee, to you.	*hal*, to him, to her, to it, to them.
Loc.	*di* or *da*, in or on me, in or on us.	*di* or *da*, in or on thee, in or on you.	*wi* or *wa*, or (after a consonant) *a*, in or on him, her, it or them.
Abl.	,,	,,	*dī*, from him, her, it, or them.

The pronouns of the dative are used like the Pª̌štō *rā*, to me; *dar*, to thee; and *war*, to him. They are very commonly employed to modify the meaning of a verb. Thus, while the verb *ǯōk* means 'to go,' we have:—

rī (or *hir*) *ǯōk*, to come (P. *rā-tlª̌l*), lit. to go to me.
dal ǯōk, to go to you (P. *dar-tlª̌l*).
hal ǯōk, to go away (P. *war-tlª̌l*), lit., to go to him.

The locative pronouns *di* or *da* (first and second persons) and *wi* or *wa* (third person) are employed in a variety of idiomatic senses to indicate presence in a particular place. Thus, *di hā* is used to mean 'he is here,' while *wa* with *hā* (the copula) postulates existence, as in *hafō wa hā*, he is, *i.e.*, he exists. *Hā* by itself never postulates existence, but is always used as a pure copula.

In the words *hir* and *hal*, the *h* is not original. After a consonant it is dropped, and the remaining *-ir* or *-al* is attached as an enclitic to the preceding word, the final consonant of which is then doubled. Thus, *šʷn hir*, today to me, becomes *šʷnn-ir*, and *šʷn hal* becomes *šʷnn-al*. The *w* of *wi* or *wa* is original, but is liable to be dropped after a consonant.

§ 67. The original form of Ō. *hir* or *rī* appears to be *ir*. In this the final *r* is connected with the Persian and Kurd. (cf. Kurd. *méra*, to me) dative postposition *rā*, but the origin of the entire word, as in the case of the P. *rā*, to me, is unknown. As shown by the P. *dar* and *war*, in the Ō. *dal*, to you, and *(h)al*, to him, the *l* also represents the Persian postposition *rā*, O. Prs. *rādiy*. The Ō. words are possibly borrowed from P. and this appears to account for the change of *r* to *l*, which in Ō. words occurs only when *r* is immediately followed by a dental. In *rādiy*, the *r* is separated from the *d* by the letter *ā*. Why the change from *r* to *l* has not occurred in *(h)ir*, I cannot say. In *rī* it has been preserved by being initial *ab initio*. With the *da* of *dal* we may compare the Kurd. pronominal suffix of the second person, *-ta*, and with the *a* of *(h)al*, the Prs. *va-rā*, to him, and Av., O. Prs. *ava-*, he.

Di or *da*, the locative of the second person may be compared with the Pª̌štō pronominal suffix *dě* or *dē*, Av. *tē*. It is difficult to explain the use of the same forms for the first person. We may perhaps refer to the O. Prs. *adam*, I, but here the *d* appears only in the nominative singular. *Wi* or *wa*, in him, etc., goes back to Av., O. Prs. *ava-*, he, and may be compared with Prs. *ō*, *ōi*, *vai*, Kurd. *au*.

Dī, from him, etc., is probably a contraction of *ta* + *ē* (P. *da* + *ē*).

For further particulars regarding these contracted pronouns, see the Vocabulary, s. vv.

§ 68. *Pronominal suffixes.*—As in other Eranian languages, the use of pronominal suffixes is common. There are three sets indicating (*a*) the nominative, (*b*) the accusative, and (*c*) any other oblique case. They are as follows:—

	Nom.	Acc.	Other Cases.
First Person.			
Sing.	*m.*	*m.*	*m.*
Plur.	*yēn.*	*n.*	*n.*
Second Person.			
Sing.	*a* or *ē.*	*t.*	*t.*
Plur.	*aī.*	*n.*	*n.*
Third Person.			
Sing.	....	*wa*, *a*, or *ᵃwa.*	*wa*, *a*, or *ᵃwa.*
Plur.	*in* or *ēn.*	*wa*, *a*, or *ᵃwa.*	*n.*

When a suffix consists of a single consonant, *a* is inserted as a junction-vowel if a consonant precedes. Thus *byōk* + *m* becomes *byōkam.*

(*a*) The suffixes of the nominative are employed with the past participles of intransitive verbs used as the past tense, to indicate the subject. Thus, *byōk*, been; *byōk-am*, I was.

With the past participle of a transitive verb, they indicate the object. Thus *χʷalak-am*, ate me, literally, eaten (was) I.

(*b*) The suffixes of the accusative indicate the object of a transitive verb in a tense not formed from the past participle. Thus, *bū χʷura*, he eats; *bū χʷura-m*, he eats me.

(*c*) The remaining group indicates the subject of a transitive verb in a tense formed from the past participle (which is passive in signification). In other words, in this connexion the suffix indicates a pronoun in the Agent case. Thus, *χʷalak-a*, he ate, lit. eaten by him. To this, a suffix of the first group may be further added, as in *χʷalak-ᵃwa-m*, he ate me, lit. eaten by him I.

The same suffixes can also be added to nouns and adjectives, usually to indicate the genitive, but also capable of being employed to indicate other cases. Thus, *a-kitāb*, the book; *a-kitāb-am*, the book of me, i.e. my book; *χʷaš-am*, pleasing to me.

For the derivation of these suffixes, see the Vocabulary, s. vv. *-a*, 1; *-a*, 2; *-aī*; *-am*; *-an*; *-in*; *-at*; *-wa*; and *-yēn.* Many of them agree most nearly with Kurd. forms.

§ 69. *Demonstrative Pronouns.*—These are *hafō*, *hafᵃ*, *afō*, or *afᵃ*, that, and *hō*, *ō*, *hā*, or *ā*, this. The forms ending in *ō* are not used in the feminine. Those in *ᵃ* and in *ā* are of common gender. Both may be used either substantively or adjectively, and both are commonly employed as pronouns of the third person.

Hafō, etc., drops the initial *ha* or *a* in the oblique cases, and then becomes *fō* or *fᵃ*. Its plural is *hafaī* or *afaī* (com. gen.), with *faī* in the oblique cases. When it refers to a person, it takes the preposition *ku* or *kū*, not *i*, in the locative, as in *ku-fō* or *kū-fᵃ*, on him; *kū-fᵃ*, on her. Otherwise, it takes *i*, as in *i-fō*, *i-fᵃ*, on it. The genitive is, singular, *ta-fō* or *ta-fᵃ*; plural, *ta-faī.*

The word *(h)a-fō* is a compound. With *ha-*, *a-*, we may compare the definite article, *a-* (§ 55), and Av. *hā*, and with *-fō*, *-fª*, Av. *ava-*. Compare P. *ha-γª* that.

§ 70. The plural of *hō*, etc., is *haī* or *hāī*, which is of common gender. It has two oblique forms. When it is used as a substantive referring to an animate being, its oblique form is *rª*, plur. *raī*, both common gender. Thus, *ta-rª*, of this person; *ta-raī*, of these persons; *kū-rª*, on this person. In other circumstances, i.e., when used as a substantive referring to an inanimate object, or as an adjective (whether referring to an animate being or to an inanimate object), the oblique form is *þª*, plur. *paī*. Thus, *ta-þª*, of this thing; *ta-paī*, of these things; *i-þª*, on this thing; *ta-þª saṛai*, of this man.

This pronoun is to be referred to the Av. *hō*, *hā*, but the oblique forms present no little difficulty. I account for *rª* as follows: In the particular instance of this pronoun, the genitive *ta-rª* is pronounced as one word. Ghulām Muḥammad Khān draws special attention to this as a curious fact (p. 131). We have seen (§ 59) that the original form of the preposition of the genitive is *tar*, not *ta*, and that this *tar* has survived in the case of certain other pronouns. I believe, therefore, that we should really divide this genitive as *tar-ª*, not *ta-rª*,[1] in which case the *ª* is at once accounted for as the true oblique form. In process of time the origin of the form would be forgotten, and the analogy of nearly every other genitive, including that of the pronoun *hafō*, would suggest that the preposition was *ta*, and that the oblique pronoun was *rª*, which would thus gradually come into use for the other cases.

I am unable to give any certain derivation for the oblique form *þª*. Two suggest themselves to me, but they are both pure guesses. It may be derived from the O. Prs. *hauv*, that, with hardening of the final *v* to *þ*; or it may by origin be a dative plural, and be derived from Av. *ābyō*, to these. But in both cases there is a total want of intermediate links.

§ 71. *Reflexive Pronoun.*—This is *χwai*, which is an adjective meaning 'own.' For 'self,' we have *a-χwai ẓān*, lit. 'one's own life.' The locative, *i-χwai inar* means 'mutually.'

The origin of *χwai* is Av. *χva-tō*, of oneself. Cf. Kurd. *χū*, Prs. *χʷu-d*.

§ 72. *Relative Pronoun.*—This is *ka*, who, which, what. It is immutable. Its origin is O. Prs., Av. *ka-*, who? Cf. Prs. *ki*, P. *ka*, Kurd. *kō* or *gō*. With the last we may compare Ō. *kān* or *gān*, when?, and *gudā*, where? When Ō. wishes to retain the interrogative force of this pronoun, it adds to it the *-ka*-suffix. See the next section.

§ 73. *Interrogative Pronouns.*—These are *kuk*, who?, and *ṡª*, what? The former refers to persons and the latter to things. Neither changes in declension, but the genitive of *kuk* is *tar-kuk*, as in the case of the first two personal pronouns. To these we may add *ṡēn*, of what sort?, and *ṡōn*, how much, how many?

The origin of *kuk* is the O. Prs., Av. *ka-*, mentioned in the preceding section, with

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[1] Ghulām Muḥammad Khān (l. c.) says that *tarª* is a contraction of *tar-rª*, but gives no proof of the statement, and is to far clearly wrong. But he is right in recognizing the preposition as *tar*, not *ta*.

the *-ka*-suffix added. That of *ŧ*^{a} is the O. Prs., Av. pronominal base *ci-*, which reappears in the Prs. *ci*, P. *ŧa*. With *ŧēn* cf. O. Prs. *ciyant-*, of what kind ?, and with *ŧōn*, the Av. *cvant-*, how much ?. *Ciyant-* and *cvant-* are different forms of the same word, and each means both 'qualis' and 'quantus'. In Ō. both forms have been preserved, and the meaning differentiated.

§ 74. *Indefinite Pronouns.*—All the above interrogative pronouns may also be used as indefinite pronouns, the distinction of meaning being indicated by the tone of voice. Thus, *kuk*, anyone, someone; *ŧ*^{a}, anything, something, and so on. Besides these, we may note :—

bī, other; Av. *bitya-*, second.

hēŧ, anything, something; borrowed from Prs. *hēc*.

har, every; borrowed from Prs. It has a plural *harr*^{a}, meaning 'all.'

VERBS.—

§ 75. The conjugation of the verb follows the usual Eranian system. There are two bases, a present and a past. From the present base are formed the customary conjugational tenses, which, in the case of Ōrmuṛī, have become the Aorist and the Imperative. From the past base is formed the past participle by the addition of the *-ka*-suffix, and from the past participle is formed the usual array of past tenses. Moreover, with one or two isolated exceptions, the verbal noun, or infinitive, is identical in form with the past participle,—in this agreeing with P^{a}ṣtō. In the case of transitive verbs, the tenses formed from the past participle are passive in signification, and agree in gender and number with the object, the subject being put in the case of the Agent. In this respect, Ōrmuṛī is in an older stage of development than standard Persian, and agrees with the Persian dialects and with the Eastern Eranian languages such as the Pāmīr dialects, Balōcī and P^{a}ṣtō. If the subject is a pronoun, it is indicated by a pronominal suffix in the Agent case, as in *χwalak-am*, a masculine thing (was) eaten by me, i.e. I ate something masculine. If the subject is a noun substantive, its Agent case is the same in form as the Nominative, so that the subject is apparently, and only apparently, in the nominative case. Thus *saṛai χwalak*, by a man a masculine thing (was) eaten, i.e. a man ate something masculine. The feminine and plural (com. gen.) of *χwalak* is *χwālk*, and *saṛai χwālk* means either 'a man ate something feminine,' or 'a man ate several things of either gender.'

§ 76. *Past Participle.*—The past participle and infinitive is formed by adding the *-ka*-suffix to the past base, with *ē*, *ō*, or *a*, as a junction-vowel. We may thus say that it is formed by adding *-ēk*, *-ōk*, or *-ak* to the past base. By far the greater number of past participles end in *ēk*, and the verbs whose past participles have this termination form the first conjugation. I am unable to give any reason for the distinction between the vowels *ē*, *ō*, and *a*. Perhaps the *ō*, is the relic of an older labial vowel, as in *byōk*, become, compared with its original, the Av. *būtā-*, or of an original *p*, as in *ṣ̌iyōk*, given, compared with the Sanskrit *prāpita-* (for the change of *pr* to *ṣ̌*, see § 29, *f.*). According to a strong tendency of Ōrmuṛī (see § 13, 4), the final *ēk* is pronounced with a *y*-sound preceding it. After a consonant, this *y* is but faintly heard, and the termination will be found written *ʸēk* in these pages, but,

after a vowel, it is fully pronounced, and the termination will be written *yēk*, with a full *y*. A *y* is also often inserted before the ō of *-ōk*, but in that case appears to be always fully sounded.

This $^{(y)}ēk$, *(y)ōk*, or *ak* termination of the past participle and infinitive also exists in the Waχī terminations *-ak* of the infinitive (*e.g.* W. *kand-ak*, Ō. *χan-ak*, to laugh), and *-k* of the past participle (*e.g.* W. *mört-k*, Ō. *mul-ak*, dead). It also occurs in the Balōcī infinitive termination *-aγ*, as in *χand-aγ*, to laugh; but it is still more frequently met with in the Piśāca languages, in which the junction-vowel *ĭ* may be compared with the *ē* of the Ō. *-ēk*. Thus:—

Pašai, past part. and infin. *han-īk*, struck, to strike.
Veron Kāfir, infin. *pesumtin-ik*, to strike.
Kalāšā Kāfir, infinitive, *nis-īk*, to sit; *ty-ēk* to strike.
Khōwār, infinitive, *d-ik*, to strike; *gan-ik*, to take.
Šiṇā, infinitive, *šido-iki*, to strike; past participle, *šid-ēgō*, struck.

§ 77. Except in the case of a few irregular verbs, the past participles of the first conjugation form the feminine singular by changing the termination $^{y}ēk$ to *ak*. The plural, which is of common gender, is always the same as the feminine singular. Thus, *γaf*$^{y}ēk$, woven, fem. and plur. *γaſak*.

The past base of an Ōrmuṛī verb of the first conjugation is most easily obtained by taking the feminine past participle and rejecting the final *ak*. Thus, *γaf-* from *γaf-ak*. In the case of this and of most other verbs it can be equally easily obtained by rejecting the final $^{y}ēk$ of the masculine; but this will not apply in all cases. Some verbs are slightly irregular in their masculine past participles, while they are regular in the feminine. In other words, in adding the masculine termination contractions due to the following long vowel of the $^{y}ēk$ are found, which do not occur in the simpler feminine form. Thus, from the Av. √*šav-*, to go, we get quite regularly the feminine past participle *šaw-ak*. But in the masculine, under the influence of the heavy following syllable, the *aw* is elided, and we get the contracted form *š*$^{y}ēk$. It will thus be seen that the feminine (and plural) of the past participle is the simpler form, and is that which retains the original past base with the least change. It will be remembered that we have seen something of a similar state of affairs in the case of nouns (§ 57). For instance, the plural, *šamī*, of *šōm*, an eye, is nearer to the Avesta *cašman-* than is the singular.

§ 78. The two following verbs of the first conjugation are quite irregular in the formation of the past participle:—

Infinitive.	Past participle. Masculine.	Past participle. Feminine and Plural.
kay$^{y}ēk$, to do, to make.	*dōk*.	*dāk*.
paχ$^{y}ēk$, to cook.	*paχak*	*pyūχk*.

As explained above, there are also a few other verbs which are irregular owing to contractions in the masculine, and for other phonetical reasons. It is unnecessary to give them here. They will all be found in the vocabulary, with their derivations so far as I have been able to ascertain them.

Verbs of the second conjugation (in *-ōk* and *-ak*) are quite irregular in the formation of the feminine-plural of the past participle. A list of these past participles, with the feminine of each, will be given when dealing with the present stem (§ 86). The form of the past base has to be obtained independently in each particular case. Generally speaking,—though in each case there are exceptions,—there is this main difference between the two conjugations, that in the first conjugations the past and present bases are the same, or, in other words, that the present base, derived from the old Eranian present, is also adopted for the past base. On the other hand, in the second conjugation the past and present bases are different. The past base is derived from the old Eranian past participle, while the present base, and it alone, is derived from the old present. Sometimes an altogether different original verb is used for the present base, as we have seen was the case in the verb *kayēk*, to do, quoted above.

§ 79. From the past participle are formed a past tense, and various periphrastic tenses. The past tense is formed by adding pronominal suffixes to the past participle. In the case of intransitive verbs these suffixes indicate the subject, with which the past participle agrees in gender and number. Thus, from *wustʸēk*, to arise, we get the following past tense, the suffixes employed being those used to indicate the nominative (§ 68*a*):—

	Singular.		Plural.
	Masculine.	Feminine	Common Gender.
1.	*wustʸēk-am.*	*wustak-am.*	*wustak-yēn.*
2.	*wustʸēk-a* or *-ē.*	*wustak-a* or *-ē.*	*wustak-aī.*
3.	*wustʸēk.*	*wustak.*	*wustak-in* or *ēn.*

It will be observed that there is no nominative suffix for the third person singular.

§ 80. In the case of transitive verbs, the past participle, being passive in origin, agrees in number and person with the object, and if the pronominal suffixes of the nominative are added, these necessarily indicate the object. Thus, *ɣafʸēk-am*, woven-I (masc.), *i.e.* wove me (masc.); so *ɣafak-am*, wove me (fem.); *ɣafʸēk-a* or *ɣafʸēk-ē*, wove thee (masc.), and so on. But if pronominal suffixes of the agent (§ 68*c*) are added, they indicate the subject, as in *ɣafʸēk-at* (a masculine thing was) woven-by-thee, *i.e.* thou wovest something masculine, and so on. In practice, however, it is more usual to add these suffixes of the agent, not to the verb itself, but to one of the preceding words in the sentence. Thus, with the verb standing by itself, we have *χwalak-at*, thou atest a masculine thing, but if we wish to say 'thou atest the pomegranate (*a-panḍūk*), we say *a-panḍūk-at χwalak*, in which the suffix *-at* is added to *a-panḍūk*, and not to *χwalak*.

In using the past participle alone to form a past tense, Ōrmuṛī follows the example of Persian, Kurdish, and the Pāmīr dialects, but differs from Pᵃšṭō, in which the participle by itself has the force of an imperfect.

§ 81. Several derivative tenses are formed from the past participle. These fall into three groups.

(*a*) A particle is simply prefixed to, or follows, the past tense already described. By adding *bū*, we get an imperfect, and by adding *sū*, we get a future imperfect. Thus, *wust^{v}ēk-am*, I arose; *bū wust^{v}ēk-am*, I was arising; *sū wust^{v}ēk-am*, I shall be arising. Sometimes the *bū* or *sū* follows the main verb, and then it, and not the past participle, takes the pronominal suffix. Thus, instead of *bū wust^{v}ēk-am*, we may have *wust^{v}ēk b-am*; and instead of *sū wust^{v}ēk-am* we may have *wust^{v}ēk s-am*.

This *bū* and this *sū* are also used with the present base to form, respectively, a present and a future, and their employment may be compared with that of similar particles in other Eranian languages. Corresponding to *bū* are P^{a}ṣtō *wu*, Persian *mē*; and corresponding to *sū* are P^{a}ṣtō *ba*, Persian *bi*, Kurdish *bĕ*. But the use of *bū* is not exactly the same as that of the P^{a}ṣtō *wu*. In Ōrmuṛī the past participle alone indicates past time, and with *bū* has the force of the imperfect. In P^{a}ṣtō, the use of *wu* is the reverse of this. Here, the past participle alone has the force of the imperfect, and with *wu* it indicates simple past time. Again, in Ōrmuṛī the present base alone is the foundation of the aorist, a tense with an indefinite force fluctuating between that of the present and that of the future, and generally used as a present subjunctive. With *bū* this aorist becomes a simple present. In P^{a}ṣtō, the present base by itself forms a simple present, which with *wu* becomes an aorist. On the other hand the use of the Persian *mē* is the same as that of the Ōrmuṛī *bū*.

The Ōrmuṛī word *bū* may be compared with the Persian *bū-*, the base of the verb *būdan*, to be (GIP. I, ii, 220). So also *sū* is to be referred to the base *šu-* of the Persian *šudan*, to become. Both these words also appear in Ōrmuṛī as ordinary verbs under the forms *byōk*, to be, and *syōk*, to become. See the following paragraphs.

§ 82. (*b*) An auxiliary verb is used with the past participle. The most important auxiliary is the verb substantive, the present tense of which is conjugated as follows. It does not change for gender:—

	Sing.	Plur.
1.	*h^{v}m*,	*hyēn*.
2.	*hai*,	*haī*.
3.	*hā*,	*hin*.

In this the initial *h* is often dropped, and quite possibly is not original. The origin is O. Prs. *amiy*, Av. *ahmi*, Skr. *asmi*, I am. Cf. Prs. *am*; P. *am*, *yam*.

The remaining tenses of the verb substantive are taken from the verb *byōk*, to be, to become, which, like the Prs. *būdan*, is conjugated throughout. The past is conjugated as follows:—

	Sing.		Plur.
	Masc.	Fem.	Com. Gen.
1.	*byōk-am*,	*buk-am*,	*buk-yēn*.
2.	*byōk-a* or *-ē*,	*buk-a* or *ē*,	*buk-aī*,
3.	*byōk*,	*buk*,	*buk-in* or *-ēn*.

The future is conjugated as follows:—

	Sing.	Plur.
1.	*sū b^{a}m,*	*sū byēn.*
2.	*sū bī,*	*sū baī.*
3.	*sū ba,*	*sū bin.*

This verb is cognate to Prs. *būdan*; Av. *bavaiti*, past part. *būta-*.

Another auxiliary verb, used only in the formation of passives (see § 95) is *syōk*, to become. This verb is conjugated like *byōk*, substituting *s* for *b* throughout.

This verb, *syōk*, is not original in Ōrmuṛī, but is borrowed from the Persian *šudan*. The change of *š* to *s* occurs only in such borrowed words (see § 49). Through *šudan*, it is to be referred to Av. √*šav-*, to go. This Avesta root reappears in its proper Ōrmuṛī form in the verb *š^{v}ēk*, to go. See both these words in the vocabulary.

§ 83. Three tenses are periphrastically formed with the aid of these auxiliary verbs.

A perfect is formed by conjugating the past participle with the present tense of the verb substantive, as in *wust^{v}ēk h^{a}m*, I have arisen; *γaf^{v}ēk h^{a}m*, has woven me. A pluperfect is formed by conjugating the past participle with the past tense of the verb substantive, as in *wust^{v}ēk byōk-am*, I had risen; *γaf^{v}ēk byōk-am*, had woven me; and a future perfect by conjugating the past tense with the future of the verb substantive, as in *wust^{v}ēk sū b^{a}m*, I shall have risen; *γaf^{v}ēk sū b^{a}m*, will have woven me.

§ 84. (*c*) A third group, consisting of a present conditional or optative and a past conditional or optative, is formed by adding *-an^{a}* to the past participle, or to the past participle of *byōk* added to the past participle, of the main verb. These change for gender and number, like other tenses formed from the past participle, but do not change for person. Thus:—

Present conditional, *wust^{v}ēk-an^{a}*, (if I, thou, or he) should arise, or would that (I, thou, or he) should arise.

Past conditional, *wust^{v}ēk byōk-an^{a}*, (if I, thou, or he) had arisen, or would that (I, thou, or he) had arisen.

I am unable to suggest the origin of this *-an^{a}*, the use of which corresponds to that of the Persian *ē* (GIP. I, ii, 151).

§ 85. *Present Base.*—In the regular verbs of the first conjugation the present base is identical in form with the past base, and, like it, is obtained by taking the feminine of the past participle and rejecting the final *-ak*. Thus, *γaf^{v}ēk*, woven, to weave; fem. *γafak*; present base, *γaf-* (see § 77). With the few irregular verbs of the first conjugation, and with all verbs of the second conjugation (the infinitives and past participles of which end in *-ōk* or *ak*), the case is different. Here the above rule cannot be applied, for the present base is usually derived from the old Eranian present, and the past base from the old Eranian past participle. There are altogether about fifteen *-ōk* verbs and twenty *-ak* verbs. In all these the present base can be obtained by taking the third person singular of the aorist, and rejecting the final *i* or *a*.

§ 86. The following is a list of the verbs of the second conjugation. It shows (1) the infinitive and past participle, masculine and feminine, (2) its derivation when

known, (3) the third person singular of the aorist, and (4) its derivation when known. It must be added that some of the derivations given are far from certain, but space is not available for me to give my reasons in each case. These will be found in greater detail in the vocabulary, to which reference should be made before rejecting off-hand any particular derivation proposed by me. When Avesta or Old Persian forms are not available for establishing a derivation, I have in several places given the corresponding forms of the cognate Sanskrit verbs. It must not therefore be assumed that the Ōrmuṛī words are derived directly from the Sanskrit words quoted. In nearly every case they are derived from cognate Eranian forms that, at the time of writing, are unknown to me.

The verbs are grouped in classes, and are not in alphabetical order.

Ōrmuṛī Past Participle.			Ōrmuṛī Aorist.	
Masculine Singular.	Fem. Sing.	Derivation.	Sing. 3.	Derivation.
ǯ-ōk, to arrive ..	*ǯā-k*	Skr. *yāta-*	*ǯ-a*	Skr. *yāti*.
by-ōk, to be, become ..	*bu-k*	Av. *būta-*	*b-a*	Av. *bavaiti*.
sy-ōk, to become ..	*su-k*	Skr. *cyuta-*	*s-a*	Av. *šavaitē*. The Ō. word is borrowed from Persian *šudan*.
nas-t-ak, to sit ..	*nās-k*	Vedic *niṣatta-*	*n-a*	Av. *nišhiδaiti*.
nwas-t-ak, to lie down	*nwās-k*	?	*nw-ī*	?
hat-ak, to abandon ..	*hōt-k*	Skr. *sr̥ṣṭa-*	*ž-a*	Av. *hərəzaiti*.
mul-ak, to die ..	*mal-k*	Av. *mərəta-*	*mr-ī*	Av. **maraiti, mairyeitē*.
praw-ak, to sell ..	*prā-k*	Skr. *pari-ukṣita-*	*prā, pra*	Av. *pairi-uχšyeiti*.
n-ōk, to take ..	*na-k*	Skr. *labd'a-*	*nis-a*	?
ny-ōk, to place ..	*nā-k*	Skr. *nihita-*	*nī-wī*	Av. *nidaδāiti*.
w-ōk, to get ..	*wā-k*	Av. *āyapta-*	*waw-ī*	Av. *apayeiti*.
ṣ̌i-yōk (for *ṣ̌-yōk*), to give.	*ṣ̌ū-k*	Skr. *prāpta-*	*ṣ̌aw-ī*	Skr. *prāpayati*.
tat-ak, to drink ..	*tōt-k*	Skr. *tr̥pta-*	*tr-ī*	Skr. *tr̥pati*.
gla-st-ak, to carry ..	*glā-s-k*	Av. *gərəpta-*	*gl-ī*	Av. *gərəwnāiti*.
ǯ-ōk, to strike ..	*ǯa-k*	Av. *jata-*	*ǯan-a*	Av. *jaṇaiti*.
hanz-yōk, to remain over.	*hanz-uk*	Av. *hãm-jata-*	*hazn-ī*	Av. *hãm-janaiti*.
waz-yōk, to slay ..	*waz-uk*	Av. *aiwi-jata-*	*wazn-a*	Av. *aiwi-janaiti*.
dʸ-ēk, to see ..	*dʸē-k*	Skr. *d'īta-*	*ǯūn-a*	Av. *zānənti* (pl. 3).
ṣ̌ī-yēk, to buy ..	*ṣ̌ū-k*	Skr. *krīta-*	*ṣ̌īn-a*	Skr. *krīṇāti*.
kwul-ak, coire ..	*kwal-ak*	?	*kīn-a*	?

Ōrmuṛī Past Participle.			Ōrmuṛī Aorist, Sing. 3.	
Masculine Singular.	Fem. Sing.	Derivation.	Sing. 3.	Derivation.
χwal-ak, to eat ..	*χwālk*	Av. *χvərəta-*	*χʷur-a*	Av. *χvaraiti.*
wri-yōk or *wᵃl-ak*, to take.	*wrū-k* or *wᵃlk.*	Av. *bərəta-*	*wᵃr-ī*	Av. *baraiti.* This verb is borrowed from Pᵃṣtō.
dil-ak, to reap ..	*dal-k*	Av. *dərəta-*	*dir-ī*	? Skr. *dīryati.*
dra-n-ak, to possess ..	*drō-n-k*	Skr. *dʿṛta-*	*dar-ī*	Skr. *dʿarati.*
γwaš-t-ak, to fall ..	*γwāš-k*	?	*γwaz-a*	Av. *vazaiti.*
maš-t-ak, to break (trans.).	*māš-k*	Skr. *maṣita-*	*maz-ī*	Skr. *maṣati.*
braš-t-ak, to burn (intrans.).	*brūš-k*	Skr. *bʿṛṣta-*	*bras-ī*	Skr. *bʿṛjjyatē.*
braš-t-ak, to burn (trans.).	*brūš-k*	Skr. *bʿṛṣta-*	*braz-ī*	Skr. *bʿṛjjati.*
piš-t-ak, to write ..	*pīš-k*	Skr. *piṣta-*	*pis-ī*	Skr. *piṁšati.*
hīš-t-ak, to read ..	*hīš-k*	Skr. *šikṣita-*	*haw-a*	?
ṣust-ak, to weep ..	*ṣust-ak*	?	*ṣaw-a*	Cf. Phl. *grīstan.*
rašt-ak or *rōš-ak*, to cause to spin.	?	?	?	?
χan-ak, to laugh ..	?	?	*χana*	Cf. Phl. *χandītan.*
γwē-k, to say ..	*γwē-k*	?	*γwaṡī*	Connected with Av. √*vac-*, which belongs to the second Av. conjugation. It has apparently been transferred to the first Av. conjugation, so that *γwaṡī* = **vacaiti.*
paχʸēk, to cook. Past participle masculine *paχ-ak.*	*pyūχ-k*	Skr. *pakwa-*, Phl. *puχtan.*	*biz-ī*	Cf. Phl. *pazēm*, I cook.

A few verbs have altogether different bases for the present and the past. Thus:—

a-γ-ōk, to be attached	*aγ-ak*	Skr. *ā-gata-*	*awas-a*	? Av. *ā-jasaiti.*
waγ-yōk, to enter ..	*waγ-ak*	Skr. *abʿigata-*	*wēs-a*	? Av. *aiwi-jasaiti.*
naγ-ōk, to emerge ..	*naγ-ak*	Skr. *nirgata-*	*nis-ī*	Skr. *niḥsarati.*
d-ōk, to propel ..	*d-ak*	Skr. *yata-*	*d-a*	Av. *dadāiti.*
ka-yēk, to do. Past participle masculine, *dō-k.*	*dā-k*	Av. *dāta-*	*kawī*, *kī*, or *ka*	Av. *kərənaoiti.*

§ 87. The following tenses are formed from the present base:—

Aorist.
Present.
Future.
Imperative.

§ 88. *Aorist.*—The aorist is the direct descendant of the old Eranian present, and is itself occasionally used as a present, or even as a future. Generally, however, it has the force of a present subjunctive. It is formed by adding personal terminations directly to the present base, and is thus conjugated for the verb *γaf^{v}ēk*, to weave, present base *γaf-*.

	Sing.	Plur.
1.	*γaf^{a}m*,	*γaf^{v}ēn.*
2.	*γēfī*,	*γafaī.*
3.	*γafī*,	*γafin.*

We may compare this with the Avesta:—

	Sing.	Plur.
1.	*barāmi*,	*barāmahi.*
2.	*barahi*,	*baraθa.*
3.	*baraiti*,	*barənti.*

and with the Sanskrit:—

	Sing.	Plur.
1.	*b'arāmi*,	*b'arāmas.*
2.	*b'arasi*,	*b'aratha.*
3.	*b'arati*,	*b'aranti.*

It will be seen that in the singular and in the third person plural the Ōrmuṛī forms can all be derived directly from those of the Avesta. In the first and second persons plural, instead of the original terminations, the pronominal suffixes of the nominative of these persons (§ 68*a*) have been added, evidently on the analogy of the corresponding persons of the past tenses.

About twenty-nine verbs of the first conjugation and nineteen verbs of the second conjugation have *a* instead of *i* as the termination of the third person singular. I have failed to discover any system according to which *a* is preferred to *ī*. Most of the *a*-verbs are intransitive, but there are numerous intransitive verbs that take *ī*. As examples of *a*-verbs we may quote:—

	Aorist, sing. 3.
amar^{v}ēk, to hear,	*amara.*
cal^{v}ēk, to proceed,	*cala.*
lag^{v}ēk, to be applied,	*laga.*
trayēk, to fear,	*traya.*
byōk, to be,	*ba.*
wazyōk, to slay,	*wazna.*
γwaṣtak, to fall,	*γwaza.*

The termination *a* occurs in other Eranian dialects. Kurd. has *e* or *a*, which Socin (GIP. I, ii, 280) connects with the verb substantive *ast*, he is. Of the Kāšān dialects some have *ā*, and others *e*, *u*, and *ī*.

§ 89. The second person singular presents several peculiarities. If the root vowel is *a*, it is generally strengthened to *ē*, as in *γēfī* in the above paradigm. Other root vowels are similarly strengthened, as in *sātī*, he may keep; *sētī*, thou mayst keep: *bizī*, he may cook; *bēzī*, thou mayst cook. This occurs only when the third person singular ends in *ī*. We may compare this strengthening with the vowel changes that occur before the long *ī* termination of plural substantives (§ 57).

Sometimes the second person singular is formed simply by dropping the final vowel of the third person, with or without strengthening of the root vowel. This occurs whether the third singular ends in *ī* or in *a*. Thus, *γwaxtī*, he may say, 2nd person, *γwaxt*; *baxšī*, he may give, 2nd pers. *bāxš*; *amara*, he may hear, 2nd pers. *amār*.

There are other minor irregularities, which will be found in the full grammar.

§ 90. *Present.*—The present is formed by adding the particle *bū* to the aorist. Thus, *bū γaf'm*, I weave or am weaving. The origin of *bū* has been dealt with in § 81*a*. See also the following section.

§ 91. *Future.*—The future is formed by substituting *sū* (see § 81*a*) for the *bū* of the present. Thus, *sū γaf''m*, I shall weave.

The terminations of the aorist are true terminations and not pronominal suffixes. Hence, they cannot be detached from the verb and attached to *bū* or *sū*, as can be done in the case of the terminations of the past tenses (§ 81*a*).

§ 92. *Imperative.*—The imperative closely follows the aorist. It is conjugated as follows:—

	Sing.	Plur.
1.	*γaf''m*,	*γafyēn*.
2.	*γēf* or *γēf''n*,	*γafaī*.
3.	*γafun* or *γafōn*,	*γafun* or *γafōn*.

In the second person singular, the termination *ī* of the second person singular of the aorist is dropped, provided the word is not a monosyllable. Thus, we have *γēf*, not *γēfī*. To this, the termination *''n* is commonly added. If the second person singular of the aorist is a word of only one syllable, then the second person singular of the imperative optionally takes the form of the third person. Thus, from *mulak*, to die, we have *mrī*, thou mayst die, and *mrī* or *mrōn*, die thou.

The third persons singular and plural have the same forms, in both cases being made by substituting *un* or *ōn* for the final *ī* or *a* of the third person singular of the aorist. So far as I am aware, this *n*-termination of the third person of the imperative does not occur in other Eranian forms of speech. I am inclined to connect it with the optative termination *an''* (§ 84).

§ 92*a*. *Other verbal forms.*—A noun of agency is formed by adding *wunkai* to the present base, as in *γaf-wunkai*, a weaver. This is borrowed from P''šṭō. As in that language, it is the nearest approach to a present participle possessed by Ōrmuṛī.

Ōrmuṛī possesses no conjunctive participle, corresponding to the Hindī *kar-kē*,

having done. Its force is obtained by a periphrasis. Thus, the Hindī *wŏh kām kar-kē calā gayā*, he, having done work, went away, would in Ōrmuṛī be expressed by *hafō kār dōk wa ʂʸēkk-al*, he did work and went away.

§ 93. *Derivative Verbs.*—A denominative verb, of the first conjugation, may be formed from a noun or an adjective. If an intransitive verb is required, the syllable *ʸēk* is added to form the past participle and infinitive. Thus, from *spīw*, white, we have *spīwʸēk*, to become white. If a transitive verb is required, then *awʸēk* or *ayēk* is added, as in *ābād*, inhabited, *ābādawʸēk* or *ābādayēk*, to make inhabited, to populate.

§ 94. *Causals.*—The termination *awʸēk* or *ayēk* is also used to make transitive verbs from intransitives, and causals from transitives. It is added to the present base. Thus, *amarʸēk*, to hear, present base, *amar-*; causal *amarawʸēk* or *amarayēk*, to cause to hear: *ɣafʸēk*, to weave, present base, *ɣaf-*; causal *ɣafawʸēk* or *ɣafayēk*, to cause to weave: *na-walak*, to take out, present base *na-wᵃr-*; causal *na-wᵃrawʸēk* or *na-wᵃrayēk*, to cause to take out: *kī-ʂʸēk*, to call, present base *kī-ʂ-*; causal *kī-ʂawʸēk* or *kī-ʂayēk*, to cause to call. The feminine of all these past participles ends in *awak*. The termination *ayak* also occurs, but very rarely.

This causal termination is to be compared with the Pᵃšṭō causal termination *-āv*, which, as pointed out in GIP. I, ii, 222, is of Indian origin. Cf. Pāli *-āpi*, *-aya*, *-ē*.

§ 95. *Passive.*—A passive is formed by conjugating the past participle with the verb *syōk*, to become (see § 82). Thus, *ɣafʸēk*, to weave; *ɣafʸēk syōk*, he was woven, *ɣafak suk*, she was woven, and so on.

INDECLINABLES.—

§ 96. *Adverbs.*—The subject of indeclinables belongs rather to vocabulary than to accidence, and a very few remarks will suffice.

The usual pronominal adverbs are:—

pa-pᵃ rang, in this manner.
pa-fᵃ rang, in that manner.
ʂᵃ rang, how?
ʈikᵃ, because.
ta-pᵃ pārᵃ, for this reason.
ta-fᵃ pārᵃ, for that reason.
ta-ʂᵃ pārᵃ, for what reason? why?
pa-pᵃ or *i-dᵃ*, here.
pa-fᵃ or *i-wᵃ*, there.
gudā, where?
hō waqt, now.
hafᵃ waqt, then.
ʂᵃ waqt, *kān*, or *gān*, when?

It will be seen that nearly all these are phrases, not independent words.

The ordinary negative is *nak*, but *mak* is used with the imperative. The usual *na* and *ma* have taken the *ka*-suffix.

§ 97. Altogether peculiar to Ōrmuṛī, and of very frequent occurrence are the particles *aī* and *dī*. One or other of these appears in every finite sentence when the substantive to which it refers is not definite, i.e. when it is not preceded by the definite article *a-* (see § 55) or is not a proper name or a personal pronoun. If the verb of the sentence is intransitive, or a copula, then they refer to the subject. If the verb is transitive, they refer to the object. If the word to which either refers is singular, then *aī* is used. If it is plural, or a singular noun of multitude, then *dī* is used.

It is difficult to determine the exact force of these particles. They are often used with a slightly adversative force, as in :—

ɣrās aī hā, ka ziyar aī hā? sūš aī hā,
black .. is, or yellow .. is? red .. is,
i.e. is it black? or is it yellow? (nay) it is red.

hō aī tar-mun marzā hā; hā aī ta-fᵃ χʷār hā,
this .. my brother is; this .. his sister is,
i.e. (on the one hand) this is my brother; (on the other hand) this is his sister.

They often have an emphatic force, like that of the Hindī *hī*. Thus :—

kū-Zaid gaḍ dī bī maχlūq ga buk-in; χō bī kukk-ir dī nak ʤōk,
Zaid with .. other people also were; but other anyones-(to-me).. not came,
Zaid aī rī-ʤōk,
Zaid .. came,
i.e. (on the one hand) other persons also were with Zaid; but (on the other hand) no others came (*-ir-ʤōk*); Zaid alone (Hindī *Zaid-hī*) came (*rī-ʤōk*).

But most often they have no apparent translatable force, and simply indicate the subject or object of a sentence. For instance, if there are two nouns in a sentence, one singular and the other plural, and if *aī* appears, then we know that it is the singular noun which is the subject, if the verb is intransitive, or which is the object, if the verb is transitive. Similarly *dī* points out a plural noun in the same way. Thus, take the phrase :—

saṛai dī bū paṇḍūcī χʷurī.
man .. .. pomegranates eats,
i.e. a man eats (*bū χʷurī*) pomegranates. Here the verb is transitive, and therefore *dī* refers to the object. As *dī*, not *aī*, is used, the object must be plural, and is therefore 'pomegranates,' and not 'man.'

Again :—

a-saṛai aī paṇḍūk χwalak.
the-man .. pomegranate ate,
i.e. the man ate a pomegranate. Here, as *saṛai* has the definite article, *aī* cannot refer to it. It must therefore refer to *paṇḍūk*, which is therefore the object of the transitive verb 'ate.'

In such cases these particles are generally pleonastic and cannot be translated, as in the following sentences :—

sir ʤawān aī hā, he is a good youth.
hō bār aī haluk hā, this load is light.
dūṇ aī bū cigī, smoke is rising.
tā aī dērī, dost thou possess (*dranak*, to possess) an uncle (*tā*)?
gāk^{a} dī bēz^{a}n, cook flesh (a noun of multitude).
ʦōn dal dī ṣaw^{a}m, how many may I give to thee (*dal*)?

The origin of these two particles is unknown to me. The fact that they cannot be used with any definite noun leads us to compare them with the Persian *yā-ĕ-waḥdat*, which is derived from the Av. *aēva-*, one. If this derivation is accepted, we are tempted to connect the plural particle *dī* with Av. *dva*, Ō. *dyō*, two; but it must be confessed that all this is pure guesswork. It may be mentioned that Kurd. has a series of determinative postpositive articles, *a*, *e*, *i*, regarding the origin and use of which scholars are not agreed (GIP. I, ii, 274).

§ 98. *Prepositions and Postpositions.*—These have been dealt with in §§ 58-60.

§ 99. *Conjunctions.*—We may mention:—

wa, and.
ga, also.
bī, moreover.
yā, or.
χ^{ō}, but,
ka, that, if.

None of these require special notice.

§ 100. *Interjections* call for no particular notice.

§ 101. An Ōrmuṛī Folktale.

(From Ghulām Muḥammad Khān's Grammar).

Sulṭān Maḥmūd i-s^{a} lawanai likī ɣwēk-in ka, 'i-ʦ^{a} likī-t bū zlī sa?'
Sulṭān Maḥmūd one madman to said that, 'what for-thy .. heart becomes?'
Hal-a ɣwēk-in ka, 'ta-ʤawān wrai i-mundɣal likī-mm-al bū zlī sa.'
To-him-he said that, 'of-young sheep fat-tail for-my-for-it .. heart becomes.'
Sulṭān i-s^{a} saṛai likī pa-ʦamī dāk ka, 'syī mūlaī-l aī ṣawaī.'
The Sulṭān one man to with-eyes made that, 'a radish-to-him even give-ye.'
Ka mūlaī-l aī w^{a}lk, a-lawanai bū a-mūlaī-a χ^{w}ālk, wa
When a-radish-to-him .. brought, the-madman .. the-radish-he was-eating, and
sar-a bū χ^{w}urtayēk, wa χanī-wa bū dāk-in. Sulṭān Maḥmūdd-al
head-he .. was-shaking, and laughters-he .. was-making. Sulṭān Maḥmūd-to-him
ɣwēk-in ka, 'ai lawanai-a, kī bū χan?' A-lawanai-l ɣwēk-in
said that, 'O madman, why .. laughest-thou?' The-madman-to-him said
ka, 'az bū ta-p^{a} pār^{a} χan^{a}m, ka kasē tū bādšāh syōk-ē, i-mundɣal inar aī
that, 'I .. of-this for laugh, that since thou king becamest, fat-tail in even
ɣwaṛ nak haʤyōk hā.'
fat not remained is.'

Grammatical Notes.—i-s^{a} lawanai, locative governed by the postposition *likī*

Many other similar cases occur lower down. *γwēk-in*, said, pl. 3, agreeing with 'words' understood, 'he said words.' This is the usual idiom for 'he said.' *i-šᵃ likī-t*, for what. The *-t* is the suffix of the genitive of the second person, referring to *zlī* 'thy heart.' *bū sa*, pres. sg. 3 of *syōk*. *Hal-a, hal*, contracted pronoun of 3rd person. *-a*, pronominal suffix of agent case of 3rd person, forming the subject of *γwēk-in*. *likī-mm-al* = *likī* + *m* + *hal*. The *m* is doubled before (*h*)*al* (§ 66). It is the suffix of the genitive of the 1st person, 'my heart.' *pa-šamī*, instr. pl. of *šōm*, an eye. *dāk* feminine of *dōk*, past part. of *kayēk*, to make. It is feminine to agree with *išārᵃ*, a sign, understood. 'He made a sign.' *syī* is feminine of *sō* or *sᵃ*, one, a. It agrees with *mūlaī*, *mūlaī-l* = *mūlaī* + *hal*. *wᵃlk*, f. of *wᵃlak*, to bring. *bū χwālk*, imperfect fem. of *χwalak*, to eat, 'he was eating (the radish, fem.).' The subject is the final *-a* of *a-mūlaī-a*. *χanī-wa*, *χanī* is plur. of *χan*, a laugh. *-wa* is suffix of 3rd person sing. agent. It takes this form, with *w*, after a vowel. *bū dāk-in*, imperfect, 3rd pl. *Maḥmūdd-al*, for *Maḥmūd* + *hal*, with doubling of the *d* before (*h*)*al*. *bū χan*, pres. sg. 2 of *χanak*, to laugh. *a-lawanai-l* = *a-lawanai* + *hal*. *ta-pᵃ*, gen. sing. inanimate of *hō*, this, governed by the postposition *pārᵃ*, for, = Hindī *is-kē liyē*, or *is-liyē*.

Free Translation.

Sulṭān Maḥmūd once said to a madman, 'for what doth thy heart long?' The madman replied, 'my heart longeth for the tail of a fat-tailed sheep.' The Sulṭān made a sign with his eyes to one of his men to give the madman just a radish. When they brought the radish and gave it to him, the madman began to eat it, shaking his head and laughing the while. Said the Sulṭān to him, 'O madman, why dost thou laugh?' He replied, 'This is why I am laughing, that since thou hast become king, there has been no fat left even on the tail of a fat-tailed sheep.'

THE LINGUISTIC CLASSIFICATION OF ŌRMURĪ.

§ 102. In order to ascertain the relationship borne by Ōrmurī to other Eranian languages, it will be convenient to follow, in the main, the lines taken by Professor Geiger in his General Survey of the Eranian Dialects and their Grouping in GIP. I, ii, pp. 412ff., which have been freely utilized in what follows.

§ 103. As pointed out by Professor Geiger, Classical Persian stands apart from other Eranian forms of speech as the descendant of the court and literary language of the times of the Achæmenides and of the Sāsānides. This was based on the dialect of the ancient district of Persis, which corresponds to the modern Fārsistān. Persian goes back, through Pahlavi, to the old Persian of the Achæmenide inscriptions, and owing to the fact of its being from the first a literary language has been preserved from decay,—or its development has been retarded,—so that it has remained unchanged for a thousand years.

§ 104. Very different was the fate of the various local Eranian dialects other than that of Persis. With nothing to retard their development, they are in a much further advanced condition of phonetic growth than their classical brother. They fall into two main groups,—a Western, or Medic, and an Eastern; both of which

agree in being more nearly related to the old language of the Avesta than to Old Persian. Although the word 'dialect' has been used in the foregoing remarks, it must be understood that under the term are included all the other known Eranian languages, such as Kurdish, Pa$tō, Balōcī, and the Pāmīr dialects. We thus get the following classification :—

A. Classical Persian; most nearly related to Old Persian.

B. Non-Persian Dialects; most nearly related to the language of the Avesta.

a. Western :—
Ossete.
The Western Dialects of Persia.
The Central Dialects of Persia.
Kurdish.

b. Eastern :—
Pa$tō.
Balōcī.
The Pāmīr dialects.

Our task is to discuss where in this arrangement we should put Ōrmuṛī.

§ 105. Ōrmuṛī agrees with Non-Persian dialects in representing an Indo-European k_1 by *s*, and an Indo-European g_1, g_1h by *z*, and not, as in Persian, by *h* and *d*, respectively. Thus, Ō. *das*, but Prs. *dah*, ten (§ 37, 1*b*): Ō. *zlī*, but Prs. *dil*, heart (§ 38, 1*a*).

§ 106. Ōrmuṛī also agrees with Non-Persian dialects in the change of original initial *dv* to *b*. Thus, while the O. Prs. *duvitīya-*, Sanskrit *dvitīya-*, is represented in Prs. by *dī* (*-gar*), another, the corresponding Av. *bitya-* is represented by Ō. *bī* (§ 74); and Av. *dvar-*, a door, becomes Ō. *bar* (§ 14, 4).

§ 107. Most of the Non-Persian dialects preserve an initial *v* unchanged. In Prs. it becomes in some cases *b*, and in others *g*. In Balōcī this latter change is also common, and in Ōrmuṛī there is a regular similar change to *γ* or *j*. Thus, the Phl. *vaca-k* becomes *baca* in Prs., and *veca*, or some such word, in most Non-Persian dialects. But in Bal. it is *gwas-k*, and in Ō. it is *γwaṡ*, a calf. Similarly, Av. *vīsaiti*, Prs. *bīst*, Bal. *gīst*, Ō. *jīstū*, twenty. An interesting point here is that, while the general Persian rule is that *v* before *ă*, *ē*, *ī*, *iy*, becomes *b*, and before *u*, *i*, *r*, becomes *g*, in Ō. it becomes *γ* before *a*, *i*, *ā*, and *j*, before *ī* (§§ 14, 2; 27, 1). The two developments, though somewhat similar in result, run therefore on independent lines.

§. 108. In the Non-Persian dialects, an original medial *c* generally retains its palatal character, but becomes *z* in Persian. In this respect Ōrmuṛī agrees with Persian as against the dialects. Thus, Av. √*pac-*, to cook; Prs. *pazad*, Ō. *bizī*, he cooks; Av. *raoc-ah-*, Prs. *rōz*, Ō. *ryūz*, a day (§ 38, 2); but, for the dialects, e.g. W. *pöcam*, I cook; G. *rūj*, a day. At the same time, Š. and Sq. have *z* like Ō. and Prs., as in Š. *pēzam*, Sq. *pezam*, I cook. Ōrmuṛī is therefere not a solitary exception in regard to this general rule for the dialects.

§ 109. In certain of the Non-Persian dialects there is a tendency for an original

spirant letter,—*h*, *χ*, *θ*, or *f*,—to disappear when immediately followed by another consonant. It is in the western dialects that this is most frequent, and with them Ōrmuṛī is in entire agreement. Thus, original *χš* becomes *š* or *š̡* (§ 28, 8), *θw* and *ft* altogether disappear (§§ 14, 9 ; 21, 5*c*), and *fš* becomes *š̡* (§ 28, 9). With a following *r*, *χr* and *θr*, become the special Ōrmuṛī sound *š̡̆* (§ 29, 1, *b*, *e*), and no example is available for *fr*.

§ 110. In the Non-Persian dialects there is a tendency to weaken intervocalic labials to semivowels or vowels. In the western dialects this is most common, and here again Ōrmuṛī agrees. Intervocalic *p* regularly becomes *w* or *ō* (§§ 11, 3 ; 14, 5). No example occurs for *b*, but intervocalic *fn* becomes *w* (§ 14, 6).

§ 111. Intervocalic *t*, *θ*, and *d*, are retained in Pa*š̡*tō and Balōcī, but in the western dialects they regularly disappear and also occasionally disappear in M. and Yd. They also regularly disappear in Ō., but not so in Prs. (§§ 33, 6 ; 34 ; 35, 4).

§ 112. Ōrmuṛī agrees with Pa*š̡*tō and the Pāmīr dialects in having developed the fricative letters *ŝ* and *ĵ*, from the original palatal *c* and *j*(*y*) (§§ 31, 1 ; 32, 1, 2). It also agrees with Pa*š̡*tō in the use of the letter *š̡*, which, as in that language, is frequently interchanged with *š* (28, 1) ; but, unlike Pa*š̡*tō, it does not change initial sonants to spirants, nor does it show any trace of the Pa*š̡*tō change of *d* and *t* to *l*. In inflexion, like Pa*š̡*tō and the Pāmīr dialects, it forms causal roots by means of the suffix *-av-*.

§ 113. Ōrmuṛī exhibits a striking agreement with the Piśāca languages in the elision of intervocalic *r* (§ 15, 6), and in the frequent epenthetic changes of vowels and consonants, especially in the formation of the plural of nouns substantive and adjective (§§ 57 ; 61) and of the masculine singular of past participles (§ 77). In inflexion, it also agrees with the Piśāca languages in the plural of the second personal pronoun (§ 64), and in the characteristic termination *k* of the infinitive and past participle (§ 76).

§ 114. Turning to other inflexional characteristics, we find that Ōrmuṛī agrees with Prs., as against the Non-Persian dialects, in having lost the oblique case. The only traces of this that survive in Ōrmuṛī are found in a few adverbial words (§ 58) and in the singular of the first personal pronoun (§ 64). On the other hand, Ōrmuṛī has preserved the distinction of gender, which is lost both in Persian and in the western dialects, but is retained in the East, in Pa*š̡*tō, Balōcī, and the Pāmīr dialects. Ōrmuṛī also differs from Persian in the use of the passive construction with transitive verbs in the past tenses. Nearly all the Non-Persian dialects agree with Ōrmuṛī in this respect.

§ 115. Ōrmuṛī agrees with the western dialects in its noun substantive using a plural formed with a termination derived from the Pahlavi *-īhā* (§ 57), although the particular resultant termination does not appear elsewhere, whereas, in Pa*š̡*tō and the Pāmīr dialects the relics of the old plural terminations have been retained (GIP. I, ii, 419). On the other hand, Ōrmuṛī does not use the termination *-ān*, which, like *-īhā*, has survived in Persian, and which is also used in the western dialects and in Balōcī.

In the formation of the genitive it does not employ the *iẓāfat*, which we meet in Persian and in most of the western dialects, but uses the preposition *ta* or *tar*, which is to be compared with the P^{a}ṣtō preposition *da*, and with the Kurd. genitive formed with *dĕ*. It is, nevertheless, to be remembered that the use of the *iẓāfat* in the western dialects is considered by Professor Geiger (p. 419) to be a borrowed practice, due to the influence of literary Persian.

§ 116. Attention must be drawn to one point of inflexion in which Ōrmuṛī agrees with Old Persian and Persian as against the Avesta and most of the dialects. This is the plural of the first personal pronoun, *māχ*, we, to be referred to the Old Persian *amāχam*, Persian *mā*, as against Avestā *ahmākəm*. In this Ōrmuṛī agrees with Old Balōcī *māχ*, and Šiγnī *māš*. The singular *az*, I, occurs also in Kurd. and Tališ *az*, and is derived directly from Av. *azəm*. On the other hand, we have seen that the nearest form to the plural of the second personal pronoun *tyūs*, you, is the Panjābī *tusī* (§ 64). Although occurring in an Indian language, this last word is almost certainly of Piśāca origin.

§ 117. So far as I have been able to compare them, Ōrmuṛī also agrees with the Non Persian dialects, as against Persian, in vocabulary. Thus, the Persian word for 'to speak' is *guftan*, derived from the O. Prs. √*gaub-*, *gaubataiy*, to speak; but the Ō. *γwēk*, to speak, as in the case of the corresponding words in Non-Persian dialects, must be referred to the Av. √*vac-* (§ 31, 3). Again, the Persian *šīr*, milk, is derived from Av. *χšīra-*, while the Ō *šīpī*, milk, as in the other dialects, is derived from Av. *χšvipta-* (28, 8*a*; cf. GIP. 3, ii, 414-5).

§ 118. To sum up:—While Ōrmuṛī agrees in a few points with standard Persian, it undoubtedly belongs to the group of Non-Persian forms of Eranian speech. Situated as its speakers are in the heart of a P^{a}ṣtō-speaking country, it would be extraordinary if it had not,—as it has,—adopted a few peculiarities from that language. In some respects it shows points of agreement with the Pāmīr dialects, and in two or three important particulars with the Piśāca forms of speech. In other points,—such as the use of the letter ښ *š* the prefixing of *γ* or *j* to words originally commencing with *v*, and the formation of the plural of its nouns and participles,—it occupies a somewhat independent position; but on the whole it agrees generally, and closely, with the western Eranian dialects, including Kurdish.

This conclusion is confirmed by the form taken by one remarkable word. According to Herodotus, the Medic (i.e. North-West Eranian) word for 'dog' was σπάκα. The corresponding Ōrmuṛī word is *spuk*, agreeing almost letter for letter with the old Medic form. No other Eranian language has preserved this word in its entirety. Persian has *sag*, and the dialects have varying forms such as *saba*, *espa*, *sipa*, *spai*, *se*, and so forth. In none of them are both the *p* and the *k* preserved. In each case, one or other has been lost. Ōrmuṛī alone has preserved all three consonants.

VOCABULARY AND INDEX OF THE ŌRMUṚĪ LANGUAGE.

Note.—In this Vocabulary, which also serves as an Index of all Ōrmuṛī words occurring in the body of the work, the order of words is based on the alphabetical order of the consonants, without any regard to the vowels. The latter come into consideration only in cases in which the same consonant or consonants are followed or separated by different vowels. Thus, the different words containing the consonants *pt* will be found in the succession *pat*, *paīt*, and *pūt*. All words beginning with vowels (whether preceded by *'ain* or not) are arranged together at the commencement of the Vocabulary, their mutual order being determined by their consonants.

The following, therefore, is the alphabetical order followed in this Vocabulary :—

Vowels (*a*, *e*, *i*, *o*, *u*), *b*, *c*, *d*, *ḍ*, *ʤ*, *δ*, *f*, *g*, *γ*, *h*, *ḥ*, *j*, *k*, *χ*, *l*, *m*, *n*, *ṇ*, *p*, *q*, *r*, *ṛ*, *s*, *ṣ*, *ʂ*, *š*, *ṣ̌*, *ʂ̌*, *t*, *ṭ*, *ʈ*, *ʧ*, *θ*, *w*, *y*, *z*, *ẓ*, *ʐ*, *ž*, *ẓ̌*.

Words Beginning with Vowels.

a-, a prefix having the force of the English definite article, as in *a-saṛai*, the man. It is apparently a form of the demonstrative pronoun *hā* or *ā*, this. §§ 55, 97, etc.

-a, 1, or *-ē*, pron. suff. of the nom. sg. of the second personal pronoun.

P. *ē*, Prs. *ī*, Kurd. *i*, M. *ai*. Other Pām. dial. *at*. § 68.

-a, 2, pron. suff. of the third person singular in any oblique case, including the acc., but not in the nom. After a vowel it takes the form *-wa*.

P. *ē*, Bal. *ē*, Kurd. *e*, ELA. 56.

Av. *-hē*, *-šē*. §§ 3, 5 ; 68 ; 101.

ā, see *hā*, 2 and *hō*, 1.

ai, interj. O. § 101.

aī, particle of emphasis used with singular nouns, the corresponding word with plural nouns and with nouns of multitude being *dī*. In this sense it closely corresponds to the Hindī *-hī*. It is also used in every finite sentence, agreeing with the subject of an intransitive verb, and with the object of a transitive verb, in this case being employed only when the noun is not definite. We may perhaps compare the vowels *a*, *e*, and *i* used in Kurd. as a postpositive article, GIP. I, ii, 274, or with Av. *aēva-*, Prs. *yā-ĕ-waḥdat*. In that case, *dī* may perhaps be connected with Ō. *dyō*, two. §§ 97 ; 101.

-aī, pron. suff. of the nom. pl. of the pronoun of the second person. P. *aī*. § 68.

i-, preposition, in, on. *i-dª*, here ; *i-wª*, there. Cf. *ku*, *kū*. Cf. Prs. *i*, *ĕ*, of ; §§ 58 ; 59 ; 64 ; 69 ; 101.

ō, see *hō*, 1.

ābād, inhabited. *ābādawʸēk* or *ābādayēk*, to populate. § 93.

idª, adv. here. § 96.

afō, see *hafō*.

aγ-ōk (p.p.f. *aγak* ; aor. sg. 2, *awas*, 3, *awasa*) to be attached ; to hit, reach

the mark ; to adjoin ; to be born. Cf. *naγōk*, *waγyōk*.

Skr. *ā* + √ *gam-* ; p.p. *āgata-*, to arrive. The origin of the present stem is doubtful. ? Av. *ā+jasaiti*, he comes, with syncope of *j*. §§ 3, 2 ; 24, 26 ; 86.

aχwara-nak, adj., hungry. Connected with *χwalak*, to eat (aor. sg. 3, *χʷura*) ; *-nak* is Prs. *-nāk*. Cf. *tra-nak*, thirsty, from *tatak*, to drink (aor. sg. 3, *trī*).

-am, pron. suff. of the first person singular in any case. Common in other Eranian languages. §§ 68 ; 101.

īmbāī, pl., friends.

amarʸēk (p.p.f. *amarak*; Aor. sg. 2, *amār*, 3, *amara*), to hear. Cf. P. *āwr-ēdᵃl*. §§ 3, 2 ; 47 ; 88-9 ; 94. Causal *amarawʸēk* or *amarayēk*. § 94.

-an, pron. suff. indicating :—

(1) the acc. pl. of the first and second persons.

(2) Any other plural case, except the nom., of all three persons.

In Kurd. the pl. termination for all three persons is *īna*, *īn*, *in*, *en*, or *na*. All Pām. dialects have *an* for the first person pl., except M. which has *am*. For the third person pl. Š. has *ēn*, M. *at*, and the others *aw*. § 68.

-in or *-ēn*, pron. suff. of the nom. pl. of the third person. Kurd. *īn* or *in*. Š. *ēn*. See the preceding. § 68.

ōn, see *hōn*.

indka, in *indka sal*, next year but one.

indkān, adv. the day before yesterday.

injīr, a fig. P. § 57.

inēlᵃ, postpos. governing gen., in possession (of), belonging (to). With *dī*, 1, from. This word is probably itself a locative, *i-nēlᵃ*, but the meaning of *nēlᵃ* is unknown. § 60.

inar, postpos. governing loc., in. This word is itself a locative, *i-nar*, in the house, at home ; hence, generally, inside. Cf. *izar*. §§ 60, 71.

unēs, card., nineteen. The word is borrowed from the Hindī *unīs*. § 63.

arāχᵃ, see *rāχᵃ*.

i-rāstᵃ, postpos. governing loc., beginning from. Cf. *lāstᵃ*.

ārat, adj. wide. P. ; 61.

a-sal, adv., this year. Cf. *sal*. Prs. *im-sāl*.

ispēk (pl. *ispicī*), m. barley.

asrīk, adj., fresh, newly made. A doubtful word.

aštēs, card., eighteen.

Prs. *haždah* ; Bš. *aštiš*.

Av. *aštadasa*. §§ 3, 1*a* ; 35, 4 ; 63.

ašt-ʸēk (p.p.f. *aštak* ; Aor. sg. 2, *īšt*, 3, *ašta*), to be standing, to stand upright, to be upright.

Prs. *istā-dan* ; Bš √*ut-*, Veron √ *išt-*.

O. Prs. *ā* + √*stā-* ; Skr. *ā* + √ *stʻā-*, *ātiṣṭʻati*, he stands by. §§ 3, 2 ; 28, 11 ; 33, 5.

-at, pron. suff. of the second person sg., indicating any case except the nom. sg.

Prs. W. Š. *at* ; M. *et*. Cf. *-a*, 1. §§ 68, 101.

awāī, card., seventy.

P. *aviā* ; Prs. *haftād*.

Av. *haptāiti-*. §§ 14, 6 ; 25, 5 ; 63.

iwᵃ, adv., there. 96.

āwrīz, a privy. Prs. *āb-rīz*. See §§ 14, 7 ; 52.

awasa, see *aγōk*.

awēs, card., seventeen.

P. *ōwalas* ; Prs. *haftdah*.

Av. *haptadasa*. §§ 25, 5 ; 35, 4 ; 63.

awwal, ord., first. Ar. 63.

ãyēk, see *hãyēk*.

az or *haz*, personal pron., I.

Sg. obl. *mun* ; Pl. nom. and obl. *māχ*.

For sg. nom. cf. O. Prs. *adam* ; Av. *azəm* ; Kurd. *az* ; P. *za* ; W. *zü* ; M. *ze*. §§ 3, 1*a* ; 25, 7 ; 38, 1*b* ; 64 ; 101 ; 116.

For sg. obl. cf. O. Prs. *manā* ; Av. *mana* ; Prs. *man* ; M. sg. obl. *men*. §§ 20, 1*a* ; 64 ; 97.

For Pl. forms cf. O. Prs. *amāχam* ; Av. *ahmākəm* ; Old Bal. *māχ* ; Š. *māš* ; M. *māχ* ; P. *mūž*. §§ 3, 7 ; 20, 1*a*, 2 ; 21, 3 ; 22, 1*b* ; 64 ; 116.

izar, postpos. governing loc., on. This word is probably itself a loc., *i-zar*, but the meaning of *zar*, in this sense, is unknown. Cf. *inar*. § 60.

ažan (pl *ažanī*), m., a certain millet, *chīnā*.

(?) cf. P. *žḍan* ; Prs. *arzan*.

bī, *bihē* or *biyē*, pron. adj., other, another. Adv., moreover.

Prs. *dī-gar* ; G. *bidī* ; Kš. *abī* ; W. *būi*, two ; M. *we* ; Kšm. *biyĕ* ; L. *bī*, also.

Av. *bitya-* ; Skr. *dvitīya-*. §§ 74 ; 97 ; 99 ; 106.

bōī, adv., near.

bū, verbal particle, used with the past to form the imperfect, and with the aorist to form the present.

Cf. P. *wu*, used with the imperfect to form the past, and with the present to form the aorist. Prs. p.p. *bū-* (GIP. I, ii, 220). The Prs. *hamē* or *mē*, of a different origin, is used similarly. § 81*a*, cf. §§ 90 ; 97 ; 101.

buḍ, adj., concealed, hidden.

bādšāh, a king. Prs. 101.

bagaṛ-wāl, adj., impetuous for the mare (of a horse).

bᵃl, adj., in good health, well. Cf. Kšm. *bal-un*, to be convalescent.

blaž-ʸēk (p.p.f. *blažak* ; aor. sg. 2, *blēžī*, 3, *blažī*), to make over, to give in charge ; to instigate.

bambaraī (pl. the same), f., a wasp. P. *bambara*.

būmmᵃ, f., the earth. Av. *būmi*. § 41, 1.

band (pl. *bandī*), m., a large stream. Prs. *band*, a dam.

ban-ʸēk (p.p.f. *banak* ; aor. sg. 2, *bēnī*, 3, *banī*), to throw down, to throw, to fling ; to insert.

W. √*büng-* (pres. *bün-am*), to throw.

bar, a door. Kurd., Kš. *bar* ; W. *bār* ; Kšm. *bar* ; P. *war* ; Prs. *dar*.

Av. *dvar-*. §§ 14, 4 ; 15, 1*b* ; 35, 3 ; 41, 2 ; 106.

bār, m., a load. Prs. *bār* ; 97.

bragai (f., *bragīyᵃ*), adj., spotted. piebald. P. *brag*. (?) corruption of Ar. *ablaq*.

bargistā, name of the language here dealt with. This is the name used by its speakers. Other people call it Ōrmuṛī.

braṣt-ak, 1 (p.p.f. *brūṣk* ; aor. sg. 2, *bras*, 3, *brasī*), to burn (intrans.).

Prs. *birišta*, roasted. P. *wrīt-ēdᵃl*. *wurat-ēdᵃl*, to be roasted. Cf. the next. §§ 28, 12 ; 86.

braṣt-ak, 2 (p.p.f. *brūṣk* ; aor. sg. 2, *brēzī*, 3, *brazī*), to burn (trans.).

Prs. *birišt-an*, to roast ; W. *va-rēš-n*, to parch (grain) ; P. *wrīt-awul*,

wurat-awul, to roast. §§ 38, 4; 41, 3, 4; 86.

Skr. √*b'rajj-*, *b'ṛjjati*, to roast, p.p. *b'ṛṣṭa-*. Phl. *brišt-an*, to roast.

bruš-ʸēk, (p.p.f. *brušak*; aor. sg. 2, *bruš*, 3, *bruši*), to glitter.

P. *brēš-ēdᵃl*; Prs. *barāz*, ornament.

Av. *brāzaiti*; Skr. *b'rājatē*, he shines. §§ 7, 2; 15, 4; 28, 3; 29, 1*g*; 38, 5; 41, 4.

brazī, see *braštak*, 2.

baš-ʸēk (p.p.f. *bašak*; aor. sg. 2, *bāš*, 3, *bašī*), to grant, give, distribute. Cf. *b-ʸēk*.

Prs. *baχš-īdan*; Bal. *bašk-aγ*; P. *baš-ᵃl*.

Av. *baχš-aiti*, he gives. §§ 28, 8*b*; 41, 1; 89.

batᵃ (pl. *batᵃī*), f., a duck. Cf. *patakkᵃ*.

Prs. *baṭ*, a duck; P. *bata*, a heron.

batkīyᵃ (pl. *batkīyī*) f., a wild duck.

Cf. Prs. *baṭak*, a duckling, and the preceding.

baṭērᵃ (pl. *baṭērᵃī*), f., a quail. Borrowed from L. *batērā*.

bũy, a scent, smell. Borrowed from Prs. *būē*. §§ 8, 5; 41, 1; 52.

b-ʸēk (p.p.f. *bayak*), to grant, give. This verb is used only in the past tenses. The aorist tenses are taken from *bašʸēk*, q.v., of which it is perhaps merely a contracted form.

bi-yōk or *b-yōk* (p.p.f. *buk*; aor. sg. 2, *bī*, 3, *ba*), to be, to become.

Kurd. *di-bim*, I am; Prs. *būd-an*, *buvam*; P. *wī*, he may be; Bal. *bī-aγ*, to be; Š. *vē-d*, he is; M. *vi-a*, he was.

Av. *bavaiti*, he is. §§ 14, 9; 41, 1; 68; 76; 82 (conjugated); 86; 88; 97.

biyān, the lower part of the back, the back part of the waist.

bizī, see *paχ-ʸēk*.

bazar, the arm from the elbow to the wrist.

(?) Cf. Av. *bāzu-*; Prs. *bāzū*, the arm above the elbow.

bāzār, m., a market. Prs. *bāzār*. § 57.

buzwā (pl. *buzwaī*), f., a spider.

bōž, picking, choosing.

bōž-ʸēk, (p.p.f. *bōžak*), to pick, to choose. Cf. *bōž*.

bēž, the place above or outside; above; outside, *bēžᵃ*. § 58.

cig, adj., high, tall.

This word may possibly be borrowed from Piśāca. Cf. Šiṇā *žīgō*, long. The latter has the same origin as *drāγ*, q.v. In Piśāca languages *dr* is liable to become *ž*. § 26, 2.

cig-ʸēk (p.p.f. *cigak*; aor. sg. 2, *cig*, 3, *cigī*), to rise. Cf. the preceding. § 97.

cal-ʸēk, (p.p.f. *calak*; aor. sg. 2 *cal*, 3, *cala*), to go, proceed. Borrowed from India. § 88.

cīw, 1, (pl. *cīwī*), f., a hollow or cave in a precipice. § 26, 2.

cīw, 2 (pl. *ciaī*), f., a roof. § 26, 2.

da, 1, *dī*, see *ḍōk*, 3.

da, 2, or *di*, contracted pronoun of the locative singular or plural of the pronouns of the first and second persons. We may compare the P. *dĕ* or *dē*, the enclitic pronoun of the second person singular (Av. *tē*), but it is difficult to explain the Ō. use for the first as well as for the second person. It may, however, be pointed out that in P. the plural form *mn̲*

is used both for the first and second persons, though, here, there is a different origin in each case (GIP. I, ii, 217). Cf. also O. Prs. *adam*, I, and §§ 66, 67.

dī, 1, contracted pronoun of the third person singular and plural, from him, her, it, or them. It is commonly used pleonastically with the ablative postposition *lāst*^{a}. §§ 60; 62.

The word is probably a contraction of *ta*+*ē* (P. *da*+*ē*), from him. §§ 65-67.

dī, 2, plural particle of emphasis. See *aī*. § 97.

dū, for *dyō*, q.v., in compounds. § 63.

dōčār (pl. *dōčarrī*), m., maize (*jōwār*). *čār* may be a corruption of *jōwār*.

dōk, see *kayēk*.

dūk^{a} (pl. *dūcī*), f., a girl. This is probably *dūw*^{a}, q.v., with the *ka*-suffix. Cf. § 21, 5. §§ 26, 3; 57.

dal, contracted pronoun, indicating the dat. sg. and pl. of the second person, to thee, to you.

Cf. P. *dar*. See §§ 17, 1; 33, 1; 47; 66-7; 97.

dil-ak (p.p.f. *dalk*; aor. sg. 2, *dir*, 3 *dirī*), to reap.

Av. *dərəta-*, cut. See §§ 17, 3; 21, 5*e*; 35, 1; 86.

dīm, ord., second.

Prs. *duyum*, *duwum*; P. *dwayam*.

O. Prs. *duvitīya-*, GIP. I, ii, 116. §§ 33, 6; 35, 1; 63.

dūm^{-y}*ēk* (p.p.f. *dūmak*; aor. sg. 2, *dūm*, 3, *dūmī*), to ache to be painful.

dūṇ, smoke.

Prs. *dūd*; Kurd. *dū*; Bal. *dūhõ*, (S.) *dīt*; Bš. *dūm*; Kšm. *d*^{a}*h*. Cf. EB. 90.

Skr. *d'ūma-*; Phl. *dūt*.

I am unable to explain the final *ṇ* in this word. § 97.

dr^{a} (pl. *drī*), f., a hair.

Cf. Khō. *drōh*, hair of the body.

darī, see *dranak*.

dirī, see *dilak*.

drāγ or *dāraγ* (f. *drāγ*^{a}), adj., long.

Prs. *dirāz*; P. *lārγ*^{a}.

Av. *darəγa-*, Skr. *dīrg'a-*. Cf. H. 547. Cf. *cig*. §§ 3, 9; 4, 2; 9, 6; 15, 1*b*; 23, 2; 24, 1; 35, 1.

dra-n-ak (p.p.f. *drōnk*; aor. sg. 2, *dērī*, 3, *darī*), to own, possess, have.

Prs. *dāštan*, *dāram*, to possess; Bal. *dār-a*$_{\gamma}$; P. *lar-*^{a}*l*.

Av. √*dar-*, Skr. √*d'ṛ-*. Like the š of *dāštan*, the *n* of *dranak* is a root-determinative. §§ 15, 1*b*; 35, 1; 86; 97.

darēšī; pl. lies. The sg. nom. is probably *darōš* or (?) *darōγ*, or some such word.

Prs. *darōγ*; Av. *draoγa-*.

darzāō, m., sound, noise.

das, card., ten.

Prs. *dah*; P. *las*. Av. *dasa*. §§ 35, 1; 37, 1*b*; 63; 105

dasam, ord., tenth.

Prs. *dahum*; P. *lasam*. Av. *dasəma-*. §§ 20, 1*b*; 63.

dist (? *d*^{a}*st*, see § 1, Rem. 1), a hand. Borrowed from Prs. *dast*. H. 567; ELA. p. 50. Cf. § 51.

dūs-^{y}*ēk* (p.p.f. *dūsak* or *dūk*; aor. sg. 2, *dūs* 3, *dūsī*), to milk (a cow, etc.).

Borrowed from Prs. *dōš-īdan*. §§ 8, 2; 35, 1; 37, 3; 49.

Av. √**duχš-*; Skr. √*duh-*; H. 578; EB. 94.

dūšī, see *čūšyēk*.

dušķī, a little, somewhat. (?) cf. P. *l*^{u}*g*, a little.

ūwᵃ (pl. *dūwī*), f., a daughter. Cf. *dūkᵃ*.

Prs. *duχt*, *duχtar*; Sanglīcī *daγ*.

Av. *duγδar-*; Phl. *duχt*. §§ 8, 2; 24, 6; 35, 1; 36.

dwās, card., twelve. Prs. *duwāzdah*; P. *dwalas*. Av. *dvadasa*. §§ 14, 4; 35, 3, 4; 63.

dwāsam, ord., twelfth. Prs. *duwāzdahum*; P. *dwalasam*. Av. *dvadasa-*. § 63.

dyō, card., two. In compound numerals, this becomes *dū*, as in *dū-jīstū*, twenty-two. Prs. *du*, Bal. *dō*. Av. *dva*.

Regarding the insertion of *y*, see § 13, 4. §§ 11, 3; 14, 4; 35, 3; 63; 97.

daya, N. of the first ten days of the month Ṣafar. (?) cf. *das*, ten.

d-ʸēk (p.p.f. *d-ʸēk*; aor. sg. 2, *ʒūnī*, 3, *ʒūna*), to see.

Prs. *dī-dan*; P. *līd-ᵃl*. Av. √*dāi-*, Skr. √*dʿī*, *dīdʿīte'*, p.p. *dʿīta-*.

The present stem is from Av. √*zan-*; Skr. √*jñā-*, to know. Cf. Caspian Prs. (Tālišī) *zūne*, know. In Bal. *zān-aγ*, to know, is also used to mean 'to see.' §§ 32, 1; 35, 1; –86.

dʸūrᵃ (pl. *dʸūrᵃī*) f., dry twigs, firewood, fuel.

(?) cf. Prs. *durūk*, a plank; Skr. *dru-*, wood. § 13, 4.

daž-ʸēk (p.p.f. *dažak*; aor. sg. 2, *dēžī*, 3, *dažī*), to load.

P. *lēš-ᵃl*, pres. sg. 3, *lēžī*. Sq. *δaχt-ao*, pres. sg. *δĕrz-am*.

Connected with Av. √*darəz-*, to hold firmly; Skr. √*dʿṛṣ-*. § 30.

ḍūbᵃ (pl. *ḍūbᵃī*), f., a pit, at water-hole. Hn. *ḍūbā*, flooded land. P. *ḍūb*, immersed.

ḍabarᵃ (pl. *ḍabarᵃī*), f., a kind of pigeon.

ḍim, f., the belly. Skr. *ḍimba-*. §§ 12, 1*a*; 20, 2.

ʒa, see *ʒōk* 1.

ʒak (f. *ʒakᵃ*), adj., lamed, wounded, hurt. Cf. *ʒōk*, 2.

ʒāk, m., a place.

Prs. *jāī*; P. *ʒāē*.

Av. √*yā-*, to come. H. 417. The Ō. word has the *ka*-suffix (§ 21, 5*a*).

ʒikᵃ, adv., because. P. 96.

ʒ-ōk, 1, or *z-ōk*, 1 (p.p.f. *ʒāk*; aor sg. 2, *ʒaī*, 3, *ʒa*), to arrive, come, go.

Cf. P. *ʒī*, he goes.

Av. √*yā-*, to come, to go. H. 417. §§ 32, 2; 66; 86; 97.

ʒ-ōk, 2, or *z-ōk*, 2 (p.p.f. *ʒak*; aor. sg. 2, *ʒan*, 3, *ʒana*), to beat, strike. Cf. *wa-zyōk*.

Prs. *zadan*, *zanam*; P. *wa-žᵃl*; Bal. *jan-aγ*.

Av. √*jan-*, *janaiti*; Skr. √*han-*, *hanti*, *hanati*, to strike. Cf. the next. §§ 21, 5*e*; 32, 1; 86.

ʒ-ōk, 3, or *z-ōk*, 3 (p.p.f. *ʒak*; aor. sg. 2, *dī*, 3, *da*), to propel.

Cf. M. *žia*, to strike, *dehi*, he strikes; W. *dī-am*, I strike. In the Piśāca languages *ti* or *di* commonly means 'beat,' as well as 'give.' Thus, Veron *pesum-ti-ogo*; Kl. *ty-ēk*; Khō. *di-k*, to beat. The past stem therefore is derived from the Eranian equivalent of Skr. *yata-*, √*yam-*, *yacchati*, to restrain, support, give. Cf. *prayēk*. The present stem is to be referred to Av. √*dā*, *dadāiti*, to give. § 86.

ʒēm, the place below; below.

ʒān, life. Prs. *jān*. § 71.

ʒana, see *ʒōk*, 2.

ʒūna see *dʸēk*.

ʤūnī-χutan, a certain time of the night, sleeping time. (?) cf. *dᵛēk*.

ʤarkᵃ, see *zarkᵃ*.

ʤaur-ᵛēk (p.p.f. *ʤaurak*; aor. sg. 2, *ʤaur*, 3, *ʤaura*), to fret, to be annoyed.

Prs. *zār-īdan*; P. *žaṛ-ᵃl*, to mourn. H. 646 connects this with Skr. √ *jṝ-*, *jarati*, to call out, but this does not account for the vowel in the Ō. word. § 51.

ʤūš-ᵛēk (p.p.f. *ʤūšak* or *dūšak*; aor. sg. 2, *ʤūš*, *dūš*, 3, *ʤūšī*, *dūšī*), to seek, search for; to look at, inspect.

Prs. *jus-tan*, to seek.

Av. *yūiδyeiti*, he fights. H. 419. §§ 28, 6; 32, 1; 32, 2; 35, 2; 36.

ʤut or *zut*, much; very. § 32, 1.

ʤawān, young; a youth. Prs. *jawān*, §§ 97, 101.

ʤa-yēk (p.p.f. *ʤawak*; aor. sg. 2, *ʤēwī*, 3, *ʤawī*), to lead, conduct, fetch.

This verb is the causal of *ʤōk*, 1.

ʃa, *ʃo*, see *haʃō*.

ga, conj., also; even. §§ 97; 99.

gāī, m., a bedstead.

gudā, adv., where? in what place? Regarding the initial *g*, see §§ 21, 2; 96.

gudai-cargai (pl. *gudaī-cargaī*), the hoopoe. In P. the hoopoe is called *mullā-cargak*, being called a *Mullā* because he carried the letter of Solomon to the Queen of Sheba.

gaḍ, 1, numeral definite suffix, as in *dū-gaḍ*, the two, both.

gaḍ, 2, *giraḍ*, or *girgaḍ*, postposition governing loc., with, together with. §§ 60; 97.

guʤ, adv., merely, only.

gākᵃ (pl. *gācī*), flesh.

Prs. *gōšt*; P. *γwaša*.

Av. *gao-*, an ox; flesh. EB. 128. §§ 21, 5*b*; 23, 1; 97.

glī, see *glastak*.

gal, adj. recumbent, lying down.

galγ, the shoulder.

gilak (pl. *gilaccī*), m., a rat.

glast-ak or *gast-ak* (p.p.f. *gāsk*; Aor. sg. 2 and 3, *glī*), to take away, transport, carry (something inanimate); to arrange the hair.

Prs. *girift-an*; Bal. *gir-aγ*.

Av. √*grab-*, *gərəwnāiti*, p.p. *gərəp-ta-*; Skr. √*grabʿ- gṛbʿṇāti*. Cf. H. 909. In *gla-st-*, the *st* is a verbal determinative. §§ 15, 6; 17, 3; 23, 1; 33, 5; 86.

gal-ᵛēk (p.p.f. *galak*; aor. sg. 2, *gēlī*, 3, *galī*), to twist, spin, roll up (intr.).

Prs. *γaltīdan*, to roll (intr.); P. *γaṛᵃl*, to twist (tr.).

As pointed out in ELA. 40, this presupposes an Eranian √**garθ-*, = Skr. √*gratʿ-*, *gratʿnāti*. §§ 3, 4; 17, 3; 48.

gil-ᵛēk (p.p.f. *gilak*; aor. sg. 2, *gil*, 3, *gilī*), to be tickled, to feel tickling.

Cf. W. *gil-göc*, a tickle.

gān, see *kān*. §§ 21, 2; 96.

gōn (pl. *gannī*), m., a stick. *gōnᵃ-mirgᵃ* (pl. *gōnᵃ-mirʤī*), f., a kind of skylark.

gingiṭ (pl. *gingiṭī*), m., the dung-beetle, the scarabæus. Borrowed from P. *gūngᵃṭ*.

gunum (pl. *gunumī*), m., wheat. Borrowed from P. *γanam*. §§ 7, 1*b*; 7, 2; 18, 3*a*; 23, 1; 48.

gaṗ (pl. *gaṗī*), m., a stone. § 57.

grī (pl. the same), m., a mountain.

Kurd. *gir*; P., W. *γar*.

Av. *gairi-*; Skr. *giri-*; Phl. *gar*. ELA. 37. §§ 10, 2; 15, 1*b*; 23, 1.

gurū (pl. *guraī*), com. gen., a kid.

Sq. *γērv*, a kid.

Av. *garəwa-*, a fœtus ; Phl. *gafr*, a young one. H. 88, 88 bis. §§ 7, 2 ; 8, 4 ; 15, 1*b* ; 23, 1.

giraḍ, *girgaḍ*, see *gaḍ*, 2.

garδai-γal (pl. *garδai-γalī*), m., a kite, a bird of prey.

girgiš^{a} (pl. *girgišī*), f., a centipede.

granyī (? *grãī*), f., knot. Probably borrowed from L. *girã*. See §§ 15, 4 ; 23, 4 ; 29, 1*c*.

gran-^{ʸ}*ēk* (p.p.f. *granak* ; aor. sg. 2, *grēnī*, 3, *granī*), to chew, masticate (Indian corn or the like).

gir-aw-^{ʸ}*ēk* (p.p.f. *girawak*) ; aor. sg. 2, *girēwī*, 3, *girawī*), to scratch. Borrowed from P. *gar-aw-ul*. Cf. Bal. *gaṛ-aγ*.

gaṛdan, the neck. Borrowed from Prs. *gardan* See § 47.

gas, f., a tooth.

Probably borrowed from P. *γāš*, see § 46. Cf. Prs. *gāz*, the teeth, *gaš-tan*, to bite.

Origin doubtful. See ELA. 333 ; H. 885. §§ 46 ; 48-9.

gastak see *glastak*.

gist-^{ʸ}*ēk* (p.p.f. *gistak* ; aor. sg. 2, *gist* ; 3, *gistī*), to turn back, to turn, return.

The initial *g* shows that this word is borrowed from Prs. *gašt-an*, and should probably be spelt *g*^{a}*st*. See § 14, 2, and cf. H. 886 ; GIP. II, ii, 89. Regarding the change of *š* to *s*, see § 49. §§ 14, 2 ; 33, 5 ; 49.

gat-ak (? p.p.f.), to be fallen, to lie upon. A doubtful word. Cf. *γwaštak*.

gatēs, in *zawāl gatēs*, a certain time of the day, 12-30 P.M.

Cf. P. *zawāl*, decline of the sun.

gōy (pl. the same), an ear.

Prs. *gōš* ; Kurd. *gūh* ; Bal. *gōš* ; P. *γwaž*.

Av. *gaoša-*. §§ 11, 1 ; 13, 2 ; 23, 1 ; 28, 14.

giyōy (pl. *gawī* or *gwāī*), f., a cow.

Prs. *gāv* ; Kurd. *gā* ; Bal. *gō-χ* ; P. *γwā* ; W. *γau*, *γü* ; M. *γāwa*.

Av, *gao-* ; Skr. *gō-*. H. 888. §§ 13, 4 ; 48.

gažōī, m., a plough-bullock. ? cf. P. *γuš-kai*.

γafin^{a}, f., weaving, the art of weaving.

γafwunkai, m., a weaver. § 92*a*.

γaf-^{ʸ}*ēk* (p.p.f. *γafak* ; aor. sg. 2, *γēfī*, 3, *γafī*), to weave, plait. Causal *γaf-aw*^{ʸ}*ēk* or *γafayēk*, § 94.

Skr. *gump'-ati* or *gup'-ati*, he plaits. §§ 13, 4 ; 21, 5*e* ; 24, 2*a* ; 34 ; 77 ; 80 ; 83 ; 85 ; 88 ; 90-92*a*, 94-5.

γilāmī, a horse's bridle. Probably a metathesis of Prs. *lagām*.

γūn (f. and pl. *γūnī*), adj., hidden ; lost.

γanδ (f. the same ; pl. *γanδī*), adj., bad.

Prs. *gand*, a stink ; Bal. *gand-aγ*, bad ; Š. *ganda*, bad ; P. *γand-*^{a}*l*, to dislike.

Cf. Skr. *gand'a-*, a stink. The initial *γ* shows that the word cannot be of Eranian origin. Cf. §§ 18, 7 ; 23, 1 ; 24, 2*a* ; 32, 6 ; 61. Cf. H. 934.

γūnδ (pl. *γūnδī*), a garment.

Cf. P. *ā-γust-*^{a}*l*, *ā-γundī*, to dress ; Ynb. *nu-γunt-*, to dress oneself (pres. stem). Skr. √*gud'*, *gud'yati*. Cf. ELA. 7. §§ 18, 7 ; 24, 2*a*.

γnwāīn (? *γnwāī*) (pl. the same), f., a water-course.

γrai (pl. *γr*^{a}*ī*), f., a fireplace.

Cf. P. *nγarai*, m.

γrās (f. *γrās*^{a} ; pl. *γrēsī*), adj., black. § 97.

γōr-aw-^{ʸ}*ēk* (p.p.f. *γōrawak* ; aor. sg. 2,

γōrēwī, 3, *γōrawī*), to throw, propel. See *γōr-ʸēk*.

γir-ʸēk (p.p.f. *γirak*; aor. sg. 2, *γir*, 3, *γirī*), to roar (as a tiger). Cf. *γwarḍ-ʸēk*.

Prs. *γurr-īdan*, to roar; Bal. *garr-aγ*, to roar; Ossetic (Western) *γär*, voice; P. *γar-ēdᵃl*, to chatter.

Skr. √*gṝ-*, *gṛṇāti*, to call to. Cf. ELA. 39. §§ 5, 4; 15, 2; 24, 2*a*.

γōr-ʸēk (p.p.f. *γōrak*; aor. sg. 2, *γōr*, 3, *γōra*), to rain (intr.).

Prs. *bār-īdan*; Bal. *gwar-aγ* (*gwārī*); P. *ōr-ēdᵃl*.

Av. *vāra-*, rain. Cf. EB. 147 and LB. 15. §§ 14, 2; 15, 1*b*.

γaṛ-ʸēk (p.p.f. *γaṛak*; aor. sg. 2, *γaṛ*, 3, *γaṛa*), to have open eyes. P. *γuṛ-ēdᵃl*.

γiṛ-ʸēk (p.p.f. *γiṛak*; aor. sg. 2, *γiṛ*, 3, *γiṛī*), to swerve, go to one side; to be concealed, hidden.

P. *γaṛ-ēdᵃl*, to swerve. Cf. Skr. *garta-*, a hollow, a cave. §§ 16, 1; 24, 2*a*.

γūṭī, the act of running.

γiƚᵃ (pl. *γiƚī*), f., a badger.

γw-ēk (p.p.f. *γwēk*; aor. sg. 2, *γwaƚ*, 3, *γwaƚī*), to speak.

Bal. *gwaš-aγ*.

Av. √*vac-*, to say. GIP. I, ii, 414. Cf. § 31, 3; §§ 14, 2; 28, 4; 31, 3; 86; 89; 101; 117.

γwar, an oath, in *γwar dʸēk*, to cause to swear, and *γwar γwaẔʸēk*, to swear.

γwarḍ-ʸēk (p.p.f. *γwarḍak*; aor. sg. 2, *γwarḍ*, 3, *γwarḍī*), to roar (as a tiger). Cf. *γirʸēk*.

Cf. L. *garkaṇ*, to roar; *gaṛgaṛ*, rumbling; Sn. *guṛaṇᵘ*, to thunder.

Prs. *γurr-īdan*, Bal. *garr-aγ*, to roar; P. *γar-ēdᵃl* and *γuṛumb-ēdᵃl*, to roar.

Skr. √*gard-*, *gardati*, to roar.

See § 47. §§ 14, 8; 24, 4; 29, 2; 39; 47.

γwarš-ʸēk (p.p.f. *γwaršak*; aor. sg. 2, *γwarš*, 3, *γwaršī*), to appear good, to look nice.

? Skr. √*vṛš-*, *vṛšyati*, to choose, select; pass. *vṛšyatē*. §§ 14, 2; 15, 2.

γwaṛ, m., fat, grease. Cf. *γwaṭ*. P. § 101.

γwāsī (pl. the same), m., grass.

Borrowed from Prs. *wāš*. See § 37, 3. Cf. H. 209. §§ 14, 2; 37, 3; 49.

γwašt-ak (p.p.f. *γwāšk*; aor. sg. 2, *γwaz*, 3, *γwaza*), to fall.

Prs. *vazīdan*, to blow (of the wind); Bal. *gwaz-aγ*, to pass over; W. *waz-n*, to fall, past sg. 1 *wāšt-am*.

Av. √*vaz-*, to fly. ELA. 265. §§ 86; 88.

γwaẔ-ʸēk (p.p.f. *γwaẔak*; aor. sg. 2, *γwaẔ*, 3, *γwaẔa*), to fear.

Cf. W. *wašuk-an*, pres. sg. 1, *waši-am*, to fear.

? O. Prs. *vi* + √*tras-*; Skr. *vi* + √*tras-*, *trasati*, with syncope of *s*. §§ 14, 2; 29, 1*d*; 37, 7.

γwaẔ-aw-ʸēk (p.p.f. *γwaẔawak*; aor. sg. 2 and 3, *γwaẔaī*), to wash, clean.

? Skr. *vi* + √*sru-*, *-sravati*, caus. *-srāvayati*, to wash away. § 14, 2; 29, 1*i*.

γwaṭ (f. *γwaṭᵃ*), adj., fat, stout. Cf. *γwaṛ*. § 47.

γwaƚ (pl. *γwaƚī*), com. gen., a calf

Prs. *baca*; Kš. *veca*; S. Bal. *gwas-k*; P. *bacai*; W. *wuš-k*.

Phl. *vaca-k*; Skr. *vatsa-*. H. 184. §§ 14, 2; 31, 2; 107.

γwaƚī, see *γwēk*.

γwaza, see *γwaštak*.

γwaž-ʸēk (p.p.f. *γwažak*; aor. sg. 2. *γwaž*, 3, *γwažī*), in *γwar γwaẔʸēk*, to take

an oath, to swear. Cf. Bal. *gwaš-aγ*, to say. See *γwēk*.

hā, 1, *hā hā* or *hō ya*, adv., yes.

Bal. *hau*; P. *hō*; M. *a*; Yd. *hō*.

hā, 2, or *ā*, Verb Subst., he is. *hᵃm* or *ᵃm*, I am.

Prs. *am*; P. *am, yam*; Bal. *ã*, all meaning 'I am.'

O. Prs. *amiy*; Av. *ahmi*; Skr. *asmi*, I am. §§ 25, 7; 66; 82 (conjugated); 97; 101. *hᵃm*, §§ 3, 7; 20, 2; 25, 3; 37, 1*b*; 82.

hō, 1, or *ō* (f. *hā*, *ā*, also used as masc.; obl. sg. an. *rᵃ*, inan. *pᵃ*), demonstrative pronoun, this. Cf. *hafō*, that.

Cf. Prs. *īn*, this; *ān*, that; Bal. *ē*, this; *ā*, that; P. *ha-γᵃ*, that. §§ 25, 7; 55; 69; 70; 96-7; 101.

Av. *hō, hā*.

For the origin of *rᵃ* and *pᵃ*, see § 70.

hō, 2, card., seven.

Prs. *haft*; Bal. *hapt*; P. *ōwa*; W. *hüb*; M. *avdē*; Ynb, *au*.

Av. *hapta*. § 25, 1, 5; 63; *hō-jīstū*, twenty-seven, 63.

hafō or *afō* (f. *hafᵃ* or *afᵃ*, also used as masc.; obl. sg. *fō*, *fᵃ*), demonstrative pronoun, that. Cf. *hō*, 1.

With *ha-fō*, cf. P. *ha-γᵃ*. The word is a compound. With *ha-*, cf. Av. *hā*, and with *fō-*, cf. Av. *ava-*. §§ 69; 92*a*; 96-7.

hal, contracted pronoun, indicating the dative singular or plural of the third person, to him, to them. It is often used as an enclitic, and when suffixed to a word ending in a consonant, *hal* becomes *-al*.

Prs. *va-rā*, to him; P. *wa-r*; W. *yār*; Š. *wi-rd, wi-r*, all meaning 'to him.'

Av. *ava-*, he. §§ 65-6; 92*a*; 101.

haluk, adj., light, not heavy. Borrowed from India. Skr. *lagʻu-*. Cf. P. *halak*, a boy. § 97.

hīlʸēk, see *hinlʸēk*

hᵃm, see *hā*, 2.

hām, adj., unripe.

Prs. *χām*; Bal. *hām-aγ*; P. *ōm*.

Skr. *āma-*. See GIP. I, ii, 67. § 25, 4.

hōm, ord., seventh.

Prs. *haftum*; P. *ōwam*.

Av. **haptəma-*. § 63.

hᵃn, interj., of warning or reproof.

Prs. *hān, hīn*.

hōn or *ōn*, pron. adj., this much, so much. § 25, 7.

hōnd (f. *hōndᵃ*, pl. *hēndī*), adj., blind.

? Cf. P. *ṛūnd*. §§ 47; 61.

handz-yōk or *hanz-yōk* (p.p.f. *handzuk* or *hanzuk*; aor. sg. 2, *hazn*, 3, *haznī*), to remain behind, be left behind; to remain over and above.

Av. *hãm* + √*jan-*, **hãm-janaiti*, Skr. *sam*+√*han-*, to collect. See *dzōk*, 2. Cf. Prs. *han-, an-*, GIP. I, ii, 157. §§ 86; 101.

hinl-ʸēk (? *hīl-ʸēk*) (f. *hinlawak*, ? *hīlawak*), past participle, ground, pulverized. This may be used as a verb in the past tense only.

? Prs. *ārd*, flour; Bal. *ārtʻ*, flour; P. *aṇ-ᵃl*, to grind, *ōṛa*, flour.

Av. *aša-*, ground. Cf. H. 13. §§ 5, 2, 5.

hēntscī (? *hētscī*), pl. tears. The singular is probably *hōntsk*, or some such word.

Prs. *ašk*; P. *ōša*; W. *yašk*. Bš. *acu*; Khō. *ašrū*; Kšm. *aš*ᵘ.

Av. *asru-*, **ašraka-*; Skr. *aśru-*. H. 69, 88; but see LB. 4, No. 431. § 9, 5.

hinʦ-ʸēk (? *hīʦ-ʸēk*) (p.p.f. *hinʦak*; aor. sg. 2, *hēnʦī*, 3. *hinʦī*), to be able, to can.

Cf. Kšm. *hĕk-un*, to be able, past part. *hĕcyōv*.

Skr. √*šak-*, *šaknōti*, to be able. §§ 5, 2, 5.

hanwalk (? *hãwalk*) (pl. *hēnlcī*, ? *hẽlcī*), f., an egg.

Prs. *χāya*; Kurd. *ha'ik*; S. Bal. *haik*; P. *hagaī*, *hā*.

O. Prs. **āvayaka-*; Latin, *ovum*; Phl. *χāyak*. H. 468. GIP. I, ii, 24. §§ 3, 10; 25, 4.

hanʒ-yōk, see *hanʣ-yōk*.

hiṇs or *hīṛs* (pl. *hiṇsī*, *hīṛsī*), m., a bear.

Prs. *χirs*; Š. *yurš*; Bš. *īʦ*.

Av. *arəša-*, Skr. *ṛkṣa-*. Cf. GIP. I, ii, 67. §§ 1, Rem. 5; 5, 2, 5; 19, 3; 25, 4.

hiṇ-ʸēk (p.p.f. *hiṇak*; aor. sg. 2, *hiṇ*, 3, *hiṇī*, to bray (like an ass).

P. *haṇ-ēd-ᵃl*; Bal. *hink-aγ*, to neigh.

har, every, Prs. § 74; *harrᵃ*, all, § 62.

hir or *rī*, contracted pronoun, indicating the dative singular or plural of the first person, to me, to us. It is often used as an enclitic, and then, when suffixed to a word ending in a consonant, takes the form *-ir*.

P. *rā*. Prs. *ma-rā*; W. *mar*, Š. *murd*, *mur*. The origin of this form and of P. *rā* is unknown to me. §§ 66-7; 97.

harrᵃ, see *har*.

hiṛ (pl. *hiṛī*; f. *hiṛᵃ*, pl. *hiṛᵃī*), a ram; f. a ewe.

P. *hēṛai*, a short-tailed ram; ? Bal. *riḍ*, id.

Skr. *ēḍa-ka-*. § 25, 4.

hīṛs, see *hiṇs*.

hãšt, card., eight. *haštī-jīstū*, twenty-eight. § 63.

Prs. *hašt*; P. *ata*; W. *hāt*, Š. *waṣt*, Sq. *wõχt*, M. *aška*.

Av. *ašta*. §§ 3, 9; 44; 13, 3; 25, 4; 63.

haštāī, card., eighty.

Prs. *haštād*; P. *atiā*.

Av. *aštāiti-*; Skr. *ašīti-*. § 63.

hīšt-ak (p.p.f. *hīšk*; aor. sg. 2. *wīw*, 3, *hawa*), to read.

For the past base cf. Skr. *šikṣita-*, instructed.

For the present base, cf. P. *l-wast-ᵃl*, to read, pres. sg. 3, *l-walī*; Bš. √*wal-*, to read. § 86.

haštam, ord., eighth. Cf. *hãšt*. Prs. *haštum*. § 63.

hatak (p.p.f. *hōtk*; aor. sg. 2, *žī*; 3, *ža*), to abandon.

Cf. P. *prē-žd-ᵃl*, pres. sg. 3, *prē-ždī*.

? Cf. Av. √*harz-*; Prs. *hištan*, *hilam*. H. 1097. The Past base in that case would be derived from the Eranian equivalent of Skr. *sṛṣṭa-*. § 86.

haṭ (pl. *haṭī*), m., a market.

Borrowed from P. *haṭaī*.

Skr. *haṭṭa-*, L. *haṭṭ*.

hēš, anything, something. Prs. *hēc*. § 74.

hẽʦcī, see *hēnʦcī*.

hīʦ-ʸēk, see *hinʦ-ʸēk*.

hawa, see *hīštak*.

hãwalk, see *hanwalk*.

hã-yēk or *ã-yēk* (p.p.f. *hãyak*; aor. sg. 2, *hẽyī*, 3, *hãyī*), to remain; to dwell, abide; to be seated.

Prs. *ni-šast-an*, *ni-šīn-am*; Bal. *nind-aγ* (p.p. *ništa*).

O. Prs. √*had-*; Av. √*had-*, *hiδ-aiti*; Skr. √*sad-*, *sīdati*. §§ 3, 10; 13, 4; 25, 1, 7; 36.

haz, see *az*.

haznī, see *handzyōk*.

jīstū, card., twenty.
Prs. *bīst*; Bal. *gīst*; P. *-wīšt*, *šil*. Av. *vīsaiti*. §§ 27, 1, 3; 63; 107.

ka, 1, interrogative and relative pronoun, who?, who (§§ 21, 1*a*; 72); used as conjunction, if, that (§ 99, 101); or (§ 97).
Prs. *ki*; Bal. *k'i* P. *ka*.
O. Prs., Av. *ka-*, who?

ka, 2, see *kayēk*.

kī, 1, or *kiyē*, adv., why?
Other Eranian languages employ the base *chi* for this adv. Cf. L. *kīwẽ*, how?, *kiũ*, why?; Bš. *kyẽ*, why?
Skr. *kim*, etc.

kī, 2, postpos., interchangeable with *likī*, to, for.
Cf. Hindī *kō* (dialectic *kē*), L. *kũ*, Kšm. *kyut*^{u}; Skr. *kṛtē*, for. § 60.

ku- or *kū-* postposition of the locative, used only with proper names of persons and personal pronouns, on. With other words, *i-* is used.
Cf. Sq. *cü-*, on. Probably connected with Skr. *kṛta-*; H. *kā*, of; *kō*, to. See § 59. §§ 21, 1*a*; 58-9; 64; 69; 97.

kuc-mayak (pl. *kuc-mayacī*), m., a crab.

kaf (pl. *kafī*), m., chaff.
Cf. Prs. *kaf*; Av. *kafa-*, foam.

kiftar (pl. *kiftarī*; f. *kiftar*^{a}), m., a pigeon.
Borrowed from Prs. *kaftar*.

huk, interrogative pronoun, who? Indefinite pron., anyone, someone.
Prs. *ki*, who?, Kš., *ke*, *ki*, *ko*, *kö*.
O. Prs., Av. *ka-*, who? The Ō. word has the *-ka* suffix. §§ 21, 1*a*; 55; 73-4; 97.

kūkrai (pl. *kūkraī*; f. *kūkrīy*^{a}), a puppy.
Borrowed from India. Skr. *kukkura-*.

kulān or *kullān* or *kwalān* (pl. *kulannī*, etc.), a son.
Compared with *kulank*^{a} and *kulanak*, qq.v., this word seems to have 'young one' for its original meaning.

kulank^{a} (pl. *kulancī*), com. gen., a kitten.

kulanak or *kwalanak* (pl. *kulanacī*), a male child, a boy. See *kulān*. § 26, 3.

kilīy^{a} (pl. *kilīyī*), f., a field-bed. ? a diminutive of P. *k*^{a}*lai*, a village.

kān or *gān*, adv., when?
Prs. *kai*; Bal. *k'āšēn*; P. *kala*.
Skr. *kadā*. See §§ 21, 2; 96.

kīna, see *kwulak*.

kūn, adj., deaf. P. *kōṇ*. See H. 845.

kundak, adv., perhaps. Cf. *kaska*.

kandzar (pl. *kandzarrī*), a harlot. Pn. *kanjar*.

kaṇ^{a}*-wra*$_{\gamma}$^{a} (pl. *kaṇ*^{a}*-wra*$_{\gamma}$*ī*), f., a kind of crow.
Cf. P. *kār-*$_{\gamma}$^{a}; Bal. *gurā*$_{\gamma}$. With *wra*$_{\gamma}$^{a}, cf. Phl. *varā*$_{\gamma}$.

kap-^{y}*ēk* (p.p.f. *kapak*; aor. sg. 2, *kēpī*, 3, *kapī*), to cut, sever. Borrowed from Pn. *kapp-ṇā*. Cf. P. *gan-kap*, a cut-purse.

kār, a work. Prs. § 92*a*.

kōr, anger.
W. *qār*. Probably, as in W., a corruption of Arabic *qahr*.

krik, aversion, loathing.
P. *kraka*.

karal, m., a mat.

kartsī, adj., split, torn, rent asunder.
Cf. Prs. *kārd*, a knife.
Av. √*kart-*, *kərəntaiti*; Skr. *kṛt-*, *kṛntati*, to cut. § 21, 1*a*.

kirwās (pl. ? *kirwassī*), m., a kind of lizard, the P. *χādamaī*.

kṛāgⁿ (pl. *kṛaʦī*, ? *kṛaʣī*), f., a hyena.
P. *kōž* or *kōg*. § 16, 2.

kṛāγ (pl. *kṛaʣī*), a crow. See *kaṇⁿ-wraγⁿ*. §§ 16, 2; 57.
Prs. *kalāγ*; P. *kār-γⁿ*. H. 862.

kṛum, adj., deep, of great depth.

kasē, adv., since. § 101.

kaska, adv., indicating hope or uncertainty, perhaps. Cf. *kundak*.

kišar, adj., young, junior, younger. P. *kašr*. Skr. *kišōra-*.

kitāb, a book. Ar. 68.

kōtalⁿ (pl. *kōtalⁿī*), f., a pelican.
P. *kōtān*, a pelican (Bellew), a wild goose (Raverty).

kōṭkīyī (pl. the same), f., a room in a village guest house.
P. *kōṭa*, a flat-roofed house, of which the word is a diminutive.

kī-ʦ-ʸēk (p.p.f. *kī-ʦawak*; aor. sg. 2, *kī-ʦēwī*, 3, *kī-ʦawī*), to call, summon. See *ʦ-ʸēk*, to proceed, go. § 94.
Causal, *kī-ʦawʸēk*, § 94.

kawī, see *kayēk*.

kūwai, (pl. *kūwaī*), m., a well.
P. *kūhai*; L. *k'uh*; Skr. *kūpa-*.

kwul-ak (p.p.f. *kwalak*; aor. sg. 2, *kīnī*, 3, *kīna*), coire. We can hardly compare Av. *gāmō*, coitus, Prs. *gādan*, as the change of *g* to *k* has no parallels except in the case of interrogative pronouns. Cf. *kān*.

kwalān, see *kulān*.

kwalanak see *kulanak*.

kwas, interrogative pronoun, what? § 86.

kiyē, see *kī*, 1.

ka-yēk (p.p.m. *d-ōk*, f., *d-āk*; aor. sg. 2, *kēwī*, *ka*, 3, *kawī*, *kī*, *ka*), to do, to make.
Prs. *kar-dan* (1 pres. *kun-am*), Kurd. *kir-in* (1 pres. *ka-m*); P. *kṛ-ˀl* and *kawul* (p.p. *ka*).
O. Prs. √*kar-*, *kunavāhy*; Av. √*kar-*, *kərənaoiti*; Skr. √*kṛ*, *karōti*. §§ 15, 6; 21, 1*a*; 78-9; 86.
With the p.p. *d-ōk*, we may compare Av. √*dā-*, *daδāiti*; Skr. √*d'ā-*, *dad'āti*. §§ 35, 1; 78; 86; 92*a*; 101.

χaī, (pl. the same), f., a field.
Cf. Skr. √*kṣi-*; *kṣiti-*, the earth; *kṣētra-*, a field.

χō, conj., but.
Cf. P. *χō*, certainly, undoubtedly, surely.
Cf. Skr. *k'alu*, certainly. §§ 97; 99.

χal, in *sa-χal*, of this kind; *ʦa-χal*, of what kind? and so on.

χālī, N. of the eleventh month of the Ōrmuṛī calendar = Zi'l-qa'dā.

χēla, adj., ignorant.

χūl-ʸēk (p.p.f. *χūlak*; aor. sg. 2, *χūl*, 3, *χūlī*), to fall (as leaves from a tree).
? cf. Skr. √*sk'al-*, *sk'alati*, to fall down.

χan (pl. *χanī*), a laugh (§ 101). *χanak*, to laugh (§§ 18, 3*b*; 22, 1*a*; 76; 86; 101).
Prs. *χanda*; Kurd. *kenin*, to laugh; Bal. *k'and-aγ*, to laugh; P. *χandā*.
Phl. *χandītan*, to laugh.

χiryāṇī (pl. the same), f., a gutter.

χsir, m., a father-in-law.
Prs. *χusur*; P. *sχar*.
Av. *χvasura-*, Skr. *švašura-*. §§ 3, 8; 5, 2; 15, 1*b*; 22, 5, 6; 37, 1*b*.

χšīnī, f., a wife's sister.
Prs. *χusrū*, a mother-in-law, *χʷēš*, a kinsman. P. *χwašīna*, a sister-in-law; *āχšai*, a brother-in-law; *χwāša*, a mother-in-law.

Skr. *švašrū-*, mother-in-law; *šyālī*, a wife's sister. Cf. *syūγ* 2.

χit (pl. *χittī*), m., a sheet.

χutan, N. of a certain time of the day, bed-time.

Cf. P. *mā-χustan*, *mā-χutan*, bed-time; *māsˈ-pšīn*, afternoon.

χwā, adj., fallen; *χwā syōk*, to fall.

χwai, reflexive pronominal adj., one's own.

Prs. *χʷu-d*, self; Kurd. *χū*; Š. *χu*, Sq. *χū*.

Av. *χva-tō*, of oneself; Skr. *swa-*, self. H. 504. §§ 22, 6; 71.

χwal-ak (p.p.f. *χwālk*; aor. sg. 2, *χʷurī*, 3, *χʷura*), to eat.

Prs. *χʷur-dan*; P. *χwaṛ-ᵃl*.

Av. √*χvar-*. §§ 14, 3; 15, 1*b*; 17, 3; 22, 6; 68; 75; 80; 86; 97.

χwār, f., a sister.

Prs. *χʷāhar*, N. Bal. *gwahār*; P. *χōr*.

Av. *χvaṅhar-*, Skr., *swasār-*. Regarding *gwahār*, see GIP. I. ii, 417. §§ 14, 3; 22, 6; 25, 6; 97.

χʷura, see *χwalak*.

χwarkai, m., a sister's son, a nephew. *χwarkīyī*, f., a sister's daughter, a niece.

P. *χōrayai*.

Skr. *swasrīya-*. §§ 14, 3; 22, 6.

χwarišᵃ, in *i-χwarišᵃ*, on the right (not left).

? Cf. P. *šai*, which Geiger, LA. 376, doubtfully connects with Skr. *dakṣiṇa-*, through **lšai*.

χʷurt-ʸēk (p.p.f. *χʷurtak*; aor. sg. 2, *χʷurt*, 3, *χʷurtī*), to shake (intr.). Causal *χʷurtayēk* (§ 101).

P. *šōr-ēd-ᵃl*.

? Skr. √*sp'ur-*, *sp'urati*. §§ 14, 6; 22, 7.

χwasr-aw-ʸek (p.p.f. *χwasrawak*; aor. sg. 2, *χwasrēwī*, 3, *χwasrawī*), to open, unfold (trans.).

P. *χwar-aw-ul*.

? Skr. √*sp'aṭ-*, *spaṭati*, causal *sp'āṭayati*. §§ 14, 6; 22, 7; 37, 6.

χwaš (f. *χwašᵃ*), adj., sweet. *χwāžāwī*, sweetness.

P. *χōž*; Bal. *vaš*. See EB. 407. §§ 14, 3; 22, 6; 29, 2.

? Skr. √*swad-* or *sward-*, *swardatē*, to taste.

χwāw, m., a dream.

Prs. *χʷāb*; N. Bal. *whāv*. P. *χōb*.

Av. *χvafna-*; Skr. *swapna-*. §§ 14, 3, 6; 22, 6.

χwāžāwī, sweetness. See *χwaš*.

lag-ʸēk (p.p.f. *lagak*; aor. sg. 3, *laga*), to be applied.

L. *lagg-ṇā*.

Skr. √*lag-*, *lagati*, passive *lagyatē*. § 88.

lig-ʸēk (p.p.f. *ligak*; aor. sg. 2, *lig*, 3, *ligī*), to roll, wallow.

? Cf. P. *rγaṛ-ēd-ᵃl*.

lak, ascent. *lik-ʸēk* (p.p.f. *likayak*; aor. sg. 2, *likaī*, 3, *likayī*), to ascend, mount. We should probably spell *lᵃk-* throughout.

P. *lak*, standing upright.

likᵃ, pain.

likī, postposition, interchangeable with *kī*, and governing the locative, to, for.

The word appears to be a compound, *li-kī*. See *kī*, 2. With *li-*, cf. P. *la*. §§ 60; 101.

lakᵃ-šᵃwai (pl. *lakᵃ-šᵃwaī*), m., a deer.

lal-ʸēk (p.p.f. *lalak*; aor. sg. 2, *lal*, 3 *lala*), to hang, be suspended; to raise an outcry.

P. *lal-ēd-ᵃl*, to raise an outcry.

laṇḍ, adj., short. P. § 61.

langīyᵃ, f., the leg.

Prs. *ling*, the leg; Bal. *ling*, *lēng*, the thigh; P. *lēngai*, the leg below the knee; W. *löng*, Š. *ling*, Sq. *lang*.

lup-ʸēk (p.p.f. *lupak*; aor. sg. 2, *lup*, 3, *lupī*), to be suckled, to drink one's mother's milk.

Cf. P. *rawd-ᵃl*; Sq. *rivd-ao*. § 17, 1.

lōṛᵃ, (pl. *lōṛī*), f., a small mountain torrent.

laṛ-ʸēk (p.p.f. *laṛak*; aor. sg. 2, *lēṛī*, 3, *laṛī*), to stir, agitate; to mix, blend; to be mixed, blended.

P. *laṛ-ᵃl*.

Skr. √*luḍ-*, *lōḍati*. § 17, 1.

lasp-aw-ʸēk (p.p.f. *laspawak*; aor. sg. 2, *laspēwī*, 3, *laspawī*), to push, shove.

lāstᵃ, postposition governing loc., from.

Cf. P. *lāsta*, side, margin. §§ 60; 62.

las-ʸēk (p.p.f. *lasak*; aor. sg. 2, *lēsī*, 3, *lasī*), to lick.

Prs. *lēs-īdan*, *lištan*; W. *liχ-am*, I lick.

Skr. √*lih-*, *lēhmi*, I lick. H. 954. Cf. GIP. I, i, 23. § 17, 1.

lēwū (pl. *lēwūī*), com. gen., a wolf.

Borrowed from P. *lēwᵃ*. See ELA. 101. § 17, 2.

lawanai (pl. *lawanaī*; f. *lawanīyᵃ*, pl. *lawanīyī*), adj., mad.

Borrowed from P. *lēwa[illegible]ai*. ELA. 101. §§ 17, 2; 101.

lwang (pl. *lwanḍī*), the slope down a mountain. Cf. *pēcūmai*.

? Cf. Bal. *tʿah-lang*, the slope of a precipice.

lwužᵃ, hunger.

Borrowed from P. *lwaža*. See ELA. p. 45.

lyirai (pl. the same), m., a lamb.

maī (pl. the same), f., a ewe.

Prs. *mēš*, Kurd. *mī*, *mē*, *mīa*, a sheep; P. *mēž*, a ewe, *maž*, a ram; W. *māi*, a sheep; Š. *maγ*, a sheep.

Av. *maēša-* (f. *maēšī*); Skr. *mēṣa-* (f. *mēṣī*). §§ 20, 1*a*; 28, 14.

māī, m., a month.

Prs. *māh*; E. Oss. *mäi*; P. *-maī* (H. 968); W. *ṁūi*.

Av. *māh-*, Skr. *mās-*. § 25, 6.

mak, prohibitive particle, used as a negative with the Imperative. Cf. *nak*.

Prs. *ma*; P. *ma-*.

Skr. Av. *mā*. The final *k* is the *-ka*-suffix. §§ 21, 5*d*; 96.

māk, adj., withered, faded.

Prs. *piž-murda*; P. *mṛāw*.

Av. √*mar-*, Skr. √*mṛ-*, to die. § 21, 5*c*.

māχ, see *az*.

mēχ, *milχai*, m., a locust.

For *mēχ*, cf. Av. *maδaχā-*.

milχai is borrowed. Cf. Prs. *malaχ*; P. *mlaχ*. §§ 22, 1*b*; 36.

muχ, the face; the mouth.

Borrowed from P. *maχ*. Skr. *mukʿa-*. §§ 22, 2; 58; *muχᵃ*, 63.

maχak (pl. *maχacī*), a kind of pulse, *mūng*, *phaseolus mungo*.

Cf. P. *maī*.

maχlūq, people. Ar. § 97.

muχ-aw-ʸēk (p.p.f. *muχawak*; aor. sg. 2, *muχēwī*, 3, *muχawī*), to knead; to rub, shampoo.

Prs. *muš-tan*; P. *muš-ᵃl*; Bal. *muš-aγ*.

Av. √*marz-*, Skr. √*mṛj-*, to cleanse. H. 983. Cf. *mutawʸēk*. §§ 7, 2; 20, 1*a*; 22, 3.

mālᵃ, a word added to indefinite pronouns of number, to indicate persons, as in *ṫōn*, several (things); *ṫōn mālᵃ*, several (persons).

mūlaī, a radish. P. § 101.

mul-ak or *mull-ak* (p.p.f. *malk*; aor. sg. 2, 3, *mrī*), to die.

Prs. *mur-dan*; E. Oss. *mäl-in*; Bal. *mir-aγ*.

Av. √*mar-*, Skr. √*mṛ-*. §§ 7, 2; 17, 3; 76; 86; 92.

miltaγ, a gun.

Turkī *miltēq*.

milīz (pl. *milīzī*), f., an apple.

? Cf. W. *mür*, Š. *mūn*, Sq. *mån*, M. *aminga*.

mēmnī, f., a female guest.

Prs. *mihmān*; P. *mēlmª* (f., *mēlmana*); Sq. *meimān*.

Av. *maēθman-*. H. 1002. §§ 18, 1*b*; 20, 1*a*; 34.

mīn, adv., yet, still; yet more, still more.

mun, 1, see *az*.

mun, 2, adv. and conj., then, at that time; for that reason; used to introduce the apodosis of a conditional sentence.

mund-γal, the tail of a fat-tailed sheep, = Prs. *dumba*. § 101.

mrī, see *mulak*.

mrīg or *mrīk* (pl. *mraʤī*), pl., a slave.

? Cf. P. *mraē*.

mirgª (pl. *mirgī* and *mirʤī*) f. and *murγān* (pl. ? *murγannī*), m., a bird.

Prs. *murγ*; P. *murγª*; S. Bal. *murg*.

Av. *mərəγa-*, Skr. *mṛga-*. §§ 5, 3; 9, 6; 12, 5; 15, 1*b*; 20, 1*a*; 23, 2; 24, 1.

murγāwī (pl. the same), f., a wild duck.

Prs. *murγābī*.

mērš, see *mēš*.

mārʦōī (pl. the same), f., an ant. The termination *ʦōī* is, as appears from the Prs. *mōr-ca*, a sign of the diminutive.

Prs. *mōr*, *mōrca*, Kš. *mōrcuna*.

Av. *maoiri-*. H. 993. §§ 4, 3; 15, 1*b*; 20, 1*a*; 31, 1.

marīyª, f., the throat, gullet, windpipe. Borrowed from P. *maraī*.

maryōk, the moon.

marzā (pl. *marzawī*), m., a brother.

Prs. *mīrzā*, *mirzā*, a prince.

maṛ (pl. *maṛṛī*), m., flour, *āṭā*.

Cf. Skr. √*mṛd-*, to triturate.

maṛistōn, a cemetery; Wazīrī P. § 46.

maṛyūγ (pl. *maṛyūʤī*), f., a frog. § 32, 3.

mªšī (pl. the same), a fly.

Prs. *magas*; Kurd. *miš*; P. *mac*; Bal. *mahisk*, (S.) *makask*.

Av. *maχši-*, Skr. *makṣikā*. §§ 2, 1; 20, 1*a*; 28, 8*b*.

miš (pl. *mišī*; f. *mišª*, pl. *mišªī*), m., a buffalo.

P. *mēš*; Bal. *gā-mēš*.

Skr. *mahiṣa-*. §§ 3, 8; 5, 1*b*; 20, 1*a*; 25, 6; 28, 5.

mašt-ak (p.p.f. *māšk*; aor. sg. 2, *maz*, 3, *mazī*), to break (intr.).

Cf. P. *māt*, broken.

Cf. Skr. √*maṣ-*, to injure. The only authority for this root is the *Dhātupāṭha*. The p.p. is said to be *maṣita-*. A form such as **maṣṭa-* would account for Ō. *maštak*. Perhaps the present base is represented by Skr. √*mṛc-*, *mṛcyati*, to injure. §§ 28, 5; 38, 3; 86.

meš, often written *mērš*, the sun.

Prs. *mihr*; M. *mīra*.

Av. *miθra-*. §§ 9, 4; 12, 3*b*; 20, 1*a*; 29, 1, 1*e*.

mutχal-ʸēk (p.p.f. *mutχalak*; aor. sg. 2, *mutχal*, 3, *mutχalī*), to thrust into, to prick.

matat (pl. *matattī*), f., an apricot.

mut-aw-ʸēk (p.p.f. *mutawak*; aor. sg. 2, *mutēwī*, 3, *mutawī*), to rub, anoint.

Cf. Prs. *muštan*, *mālīdan*; Bal. *mušaγ*; P. *mušªl*.

Av. √*marz-*, *marəzaiti*; Skr. √

mṛǰ-, mārṣṭi, p.p. *mṛṣṭa-*. Cf. *muχ-aw-ᵛēk*. § 33, 5.

muṭ, the fist.

? Borrowed from P. *mūṭ*.

Prs. *mušt*; W. *möst*; Sq. *mut*.

Av. *mušti-*; Skr. *muṣṭi-*.

māwᵃ, f., a mother.

Prs. *mād, mādar*; Kurd. *māk*; Kš. *māi, mōya*; Bal. *māθ*; P. *mōr*; Hn. *mā*.

Av. Skr. *mātar-*. H. 956. §§ 15, 7; 20, 1*a*; 33, 6.

mayā, a flock, a herd.

myāndēnī, f., a mare.

? A loan-word from Prs. *mādiyān*, P. *mādyān*.

Av. Skr. *mātar-*. § 13, 4.

myaur (pl. *myaurī*), m., a peacock.

Hn., P. and Bal. *mōr*.

Skr. *mayūra-*. §§ 13, 1, 4.

myāsī (pl. *myāsaī*), f., a mosquito.

Borrowed from P. *māšai*. §§ 13, 4; 47; 49.

mizdik (pl. *mizdicī*), m., a mosque.

Ar. *masjid*. Cf. Bal. *masīt*.

mᵃz-ᵛēk (p.p.f. *mᵃzak*), to be twisted (of string, rope, etc.).

nō, see *nᵃh*.

nacī (pl. the same), f., a white ant.

naɣ-ōk (p.p.f. *naɣak*; aor. sg. 2, *nis*, 3, *nisī*), to emerge, issue. Cf. *aɣōk*.

Skr. *nir*+√*gam-*, p.p. *nirgata-*. For the present stem, cf. Skr. *niḥ*+√*sṛ-*, *niḥsarati*. §§ 3, 3; 5, 1*b*; 15, 6; 24, 2*b*; 86.

nᵃh, card., nine. §§ 18, 1*a*; 63. *nō-jīstū*, twenty-nine. § 63.

Prs. Bal. *nuh*; P. *noh*.

Av. Skr. *nava*.

nᵃham, ord., ninth.

Prs. *nuhum*; P. *nam*.

Av. *nāuma-*; Skr. *navama-*. The *h* in *nᵃham* is modern. See H. 1056. § 63.

nak, neg. adv., not. Cf. *mak*.

Av. Skr. *na*. The *k* of *nak* is the *-ka*-suffix. §§ 21, 5*d*; 96-7; 101.

-nak, see *aχwara-nak* and *tra-nak*. § 46.

nāk, f., a wife. *nāk kayēk*, to take a wife, to marry a woman.

The word may be the p.p.f. of *nyōk*, to put, q.v.

n-ōk (p.p.f. *nak*; aor. sg. 2, *nis*, 3, *nisa*), to seize, catch hold of.

P. *nīwul*, pres. sg. 3, *nisī*.

Cf. Skr. √*labʿ*; Prakrit √*lē-*, take. In modern India this root generally preserves the *l*, but in Kšm. it becomes *ni-*. I can make no suggestion as to the origin of the present base *nis-*. §§ 18, 2; 86.

nikǐz-ᵛēk (p.p.f. *nikǐzak*; aor. sg. 2, *nikǐz*, 3, *nikǐzī*), to throw down; to throw, propel.

nālattī, pl., swine. The singular form of this word is not available.

nim-ᵛēk (p.p.f. *nimak*; aor. sg. 2, *nim*, 3, *nimī*), to descend.

Skr. √*nam-*, *namati*. This would lead us to suppose that here, as elsewhere, *i* represents *ᵃ*. See § 1, Rem. 1. §§ 5, 2; 18, 1*a*; 20, 1*a*.

nǐnī, the nose.

? Prs. *bīnī*; Bal. *gīn*, breath.

Av. *vaēnā-*, the breather, the nose.

The origin of the initial *n* is obscure. Can we postulate an Av. **ni-vaēnā-*?

nar, f., a house.

nōrš̌, see *nōš̌*.

nōṛī (pl. the same), f., bread.

Borrowed from P. *nwaṛaī*. See ELA. 153.

nisa, see *nōk*.

nisī, see *naɣōk*.

nas-t-ak (p.p.f. *nāsk*; aor. sg. 2, *naī*, 3, *na*), to sit.

Prs. *nišas-tan*; P. *(kšē-)nās^{a}t-^{a}l* (pres. sg. 3, *na*).

Av. *ni*+√*had-*, *nišhiδaiti*; Skr. *ni*+√*sad-*, *niṣīdati*. H. 1033. For the past base cf. Vedic *niṣatta-*, seated. §§ 3, 3; 86.

nīšt, the place above, or outside. Used in adverbial phrases, such as *i-nīšt^{a}*, outside. § 58.

nōšy, often written *nōršy*, soft, not hard.

Prs. *narm*. The *a* has become *ō* under the influence of the following *m*. Skr. *namra-* (through **navra-*). See §§ 11, 3; 29, 1*h*.

nāw^{a} (pl. *nāwī*) f., a hollow between two hills.

Prs. *nāv*, a trough; P. *nāwa*, a gutter.

Av. *nāvaya-*, flowing; Skr. *nāv-ya-*, navigable. H. 1024. §§ 4, 1*b*; 14, 1*b*; 18, 1*a*.

nawī, card., ninety.

Prs. *navad*; P. *nawē*.

Av. *navaiti-*; Skr. *navati-*. §§ 6, 4; 14, 1*b*; 33, 6; 63.

nīwī, see *nyōk*.

na-w^{a}l-ak (p.p.f. *na-w^{a}lk*; aor. sg. 2, *na-w^{a}r*, 3, *na-w^{a}ra*), to take out, bring out. Cf. *w^{a}lak*. Causal, *na-w^{a}raw-^{y}ēk* or *na-w^{a}rayēk*, § 94.

Av. *nis*+√*bar-*, *-baraiti*; Skr. *nis*+√*bʿṛ-bʿarati*. §§ 3, 3; 17, 3; 86; 94.

na-w^{a}ra, see *na-w^{a}lak*.

nwas-t-ak (p.p.f. *nwāsk*; aor. sg. 2, and 3, *nwī*), to lie down, to go to sleep. Probably a by-form of *nastak*, q.v.

Cf. W. *nast-am*, I lay down. § 86.

nāwyī, f., a bride.

Borrowed from P. *nāwē*. Cf. EB. 273.

ny-ōk (p.p.f. *nāk*; aor. sg. 2, *nīw*, 3, *nīwī*), to put, place, set.

Prs. *nihādan* (pres. sg. 1. *nih-am*).

Av. *ni*+√2 *dā-*, Skr. *ni*+√*dʿā-*, p.p. *nihita-*. H. 1057. § 86.

niyāk, m., a maternal uncle.

P. *niyāy^{a}*.

p^{a}, see *hō*, 1.

pa, prep., by, by means of.

Prs. *bad*, *ba*, *bi*; P., S. Bal. *pa*.

O. Prs. *patiy*; Av. *paiti*; H. 144. §§ 40, 1; 58-9; 96; 101.

piē (pl. the same), m., a father. The compound *zal-piē* (q.v.) means either a grandfather or a grandmother.

Prs. *pidar*; Kurd. *pier*, (Zaza) *pī*; Kš. *pei*; Bal. *pit*; P. *plār*.

Av. Skr. *pitar-*. H. 286. §§ 5, 1*b*; 15, 7; 33, 6; 40, 1.

pōī, understanding, intelligence.

P. *pōh*, intelligent.

pēcūmai (pl. the same), m. the slope up a mountain. P. Cf. *lwang*.

pak^{a} bāš^{a} (pl. *pak^{a}ī bāšī*), f., a kind of kite or falcon.

pīkak (pl. *pīkacī*), m., milk, tyre, buttermilk.

Bal. *pʿilkaγ*, to milk.

paχ-^{y}ēk (p.p.m. *paχak*, f., *pyūχk*; aor. sg. 2, *bēzī*, 3, *bizī*), to cook.

The origin of the initial *b* in the present stem is obscure. See § 41, 3.

Prs. *puχtan*, pres. sg. 1, *paz-am*, Kurd. *pātin*, *bĕ-piž*; S. Bal. *pac-ag*; W. *pöc-am*, Sq. *pezam*, Š. *pēz-am*, I cook; P. *paχ-awul*.

Av. Skr. √*pac-*, to cook; Phl. *puχtan*, *pazēm*. H. 285. §§ 3, 1*b*; 7, 2; 22, 1*b*; 38, 2; 40, 1; 41, 3; 78; 86; 97; 108.

plaṣt-ʸēk (p.p.f. *plaṣtak*; aor. sg. 2, *plaṣt*, 3, *plaṣtī*), to fold, wrap.

plaṭ-ʸēk (p.p.f. *plaṭak*; aor. sg. 2, *plaṭ*, 3, *plaṭī*) to be upset.

P. *palaṭ^{a}l*.

Skr. *paryasta-*; Pr. *pallaṭṭa-*.

pan, adj., wide, extended.

Prs. *pahn*; Kš. *pēn*, *pan*, Kurd. *pān*; P. *plan*.

Av. *paθana-*. H. 344. §§ 18, 1*b*; 40, 1.

pīn (pl. *pīnī*), m., honey.

Prs. *angu-bīn*; Bal. *bēna*$_{\gamma}$; P. *gabīna*.

Phl. *ang-pēn*, bee-honey.

ṗōn (pl. *panī*), m., the upper terrace or roof of a house.

? Prs. *bān*, a house. Phl. *bān*, a roof. § 52.

panḍūk (pl. *panḍūcī*), m., a pomegranate.

? Cf. P. *p^{a}nḍ*, a lump; *panḍ*, a load for the head; *panḍūkai*, a small load for the head. §§ 57; 80; 97.

pēnʣ, card., five; *panjī-jīstū*, twenty-five. §§ 18, 6; 27, 2; 32, 5; 63.

Prs. *panj*; Bal. *p'anc*; P. *pinʣa*; W. *panz*, Š. *pinz*.

Av. Skr. *pañca*. §§ 9, 3; 18, 6; 27, 2; 32, 5; 40, 1; 63.

panʣam, ord., fifth.

Prs. *panjum*; Bal. *p'ancumī*; P. *pinʣam*.

Av. **pancəma-*; Skr. *pañcama-*. § 63.

panʣēs, card., fifteen, § 63.

panʣāṣṭū, card., fifty.

Prs. *panjāh*; Bal. *p'anjāh*; P. *panʣōs*.

Av. *pancāsata-*, Skr. *pañcāšat-*. § 63.

pīng (pl. *pinʣī* or *pīnʣī*), m., a cock. § 57.

ping^{a}, N. of the time just before dawn.

? Connected with *pīng*.

pingṛak (pl. *pingṛakī*), m., a moth.

pingīy^{a} (pl. *pingīyī*), f., a hill plateau.

panjī, see *pēnʣ*.

pār^{a}, postpos. governing gen., for.

Cf. P. *da-pāra*, for the sake of. §§ 60; 96.

pērī, f., adv. now.

Apparently connected with *p^{a}*, the inanimate oblique form of the pronoun *hō*, 1, this. ? for *p^{a} vērī*, at this time.

parγūn-ʸēk (p.p.f. *parγūnak*; aor. sg. 2, *parγūn*, 3, *parγūnī*), to dress oneself, to put on clothes.

Skr. *pari*+√*gud'*, *-gud'yati*, he wraps up, *-gud'nāti*, he is angry. Here there has been confusion between the two forms. Cf. P. *ā-γūst^{a}l*, to clothe; Bal. *guš*, clothing. §§ 15, 1*b*; 18, 5; 24, 2*b*; 40, 2.

pōrkai, in *pa-pōrkai*, adv., together with.

Cf. P. *pōrī*, close to; on the far side.

Av. *pāire* (loc. of *pāra-*), Skr. *pārē*, on the far side. EIA. 182.

parkāṛ^{a} (pl. *parkāṛī*), f., wood in chips, splinters, wood split up for firewood.

prān, adv., yesterday.

Prs. *paran*; P. *parūn* or *pārūn*.

O. Prs. *parana-*, former; Av. *parō*, Skr. *paraḥ*, beyond; Skr. *purā*, formerly. H. 303. §§ 3, 8; 4, 2; 15, 1*b*; 18, 1*b*; 40, 1.

prūnʣaw-ʸēk, see *prusnaw-ʸēk*.

parōṛ^{a} (pl. *parōṛī*), f., rice-straw.

P. *palāla*; L. *palālī*.

Skr. *palāla-*. §§ 11, 2; 15, 3.

prusn-aw-ʸēk (p.p.f. *prusnawak*; aor. sg. 2, *prusnēwī*, 3, *prusnawī*), to sprinkle. The causal of this verb is *prūnʣ-aw-ʸēk*, § 18, 6.

Prs. *pāšīdan*, *pašanjīdan*; P. *pāš-^{a}l*.

The Ō. form can be referred to

Av. *pairi*+√*hic-*, *-hincaiti*; Skr. *pari*+√*sic-*, *-siñcati*. The Prs. and P. forms should probably be referred to Av. *paiti-*, Skr. *prati-*. §§ 15, 1*b*; 18, 6; 40, 2.

prast-ʸēk (p.p.f. *prastak*; aor. sg. 2, *prast*, 3, *prastī*), to worship.

Prs. *parast*, a worshipper.

Skr. *pari*+√*st'ā-*. H. 298. §§ 15, 1*b*; 40, 2.

parᵃšᵏᵃ (pl. *prēšcī*), f., a swallow, a swift.

Prs. *piristū*, dialectic *ʃarāštuk*.

Cf. Greek περιστερά, a dove (H. 382).

prēš, in *mēš-prēš*, N. of a certain time of the day, sunrise. (*mēš*,=sun).

praw-ak (p.p.f. *prāk*; aor. sg. 2 and 3, *pra* or *prā*), to sell.

Prs. *firōχtan*; P. *prōwul*.

Av. **pairi*+√*vaχš-*. H. 824 gives **fra*+√*vaχš-* for Prs. *firōχtan*, but see § 40, 2. §§ 15, 1*b*; 40, 2; 86.

parawak, a broom. Cf. *parayēk*.

pra-yēk (p.p.f. *prawak*; aor. sg. 2, *prīw*, 3, *praī*), to strike, beat.

Kl. *prau*, beaten; Khō. *prai*, beaten. Both these words also mean 'given.' Bš. √*prē-*, to give, also used in Wai Kāfir.

Av. *pairi*+√*dā-*, *dadāiti*; Skr. *pari*+√*dā-*, *-dadāti*, to hand over. Cf. the colloquial English 'I'll give it you.' Or the origin may be the Eranian equivalent of the Skr. *prayata-*. Cf. *ḍōk*, 3. § 40, 2.

para-yēk (principal parts not available), to sweep. Cf. *parawak*.

pāṛī, f., the foot.

Prs. *pai*; Bal. *p'āð*; S. Bal. *pǎd*; P. *pal*.

Av. *pǎδa-*; Skr. *pǎda-*. The final *ṛī* of the Ō. word is probably the well-known Indian diminutive suffix. §§ 4, 1*b*; 16, 2.

pṛōng (pl. *pṛandḳī*), m., a leopard. Borrowed from Wazīrī P. § 32, 3.

paṛy-ēk (p.p.f. *paṛyak*; aor. sg. 2, *paṛṛaī*, 3, *paṛyī*), to fry, roast.

pisī, 1 (pl. the same), f., a firefly.

pisī, 2, see *piṣtak*.

pus (pl. *pusī*), com. gen., a cat.

Prs. *pušak*; S. Bal. *pūšī*; P. *pišō*; W. *piš*, Š. *paš*, M. *piškē*.

pisk, 1 (pl. *pıscī*), m., butter.

Prs. *maska*, Nāy. *mesge*, fresh butter. § 40, 4.

pisk, 2 (pl. *piscī*), m., the pulse (of an artery, etc.).

piṣ-t-ak (p.p.f. *piṣk*; aor. sg. 2, *pīs*, 3, *pisī*), to write.

Prs. *ni-vištan*, *ni-bištan*.

O. Prs. (*ni*)+√*pais-*, Skr. √*piš-*, *piṁšati*, p.p. *piṣṭa-*, to adorn. H. 1051. §§ 28, 5, 12; 37, 2*b*; 39; 40, 1; 86.

puštᵃn-aw-ʸēk (p.p.f. *puštᵃnawak*; aor. sg. 2, *puštᵃnēwī*, 3, *puštᵃnawī*), to ask.

A nominal verb from *puštᵃnᵃ*, enquiry. P. *puṣt-ēdᵃl*; Prs. *purs-īdan*.

Av. √*pərəs-*, *pərəsaiti*, to ask; Skr. √*prac'-*, *pr̥cc'ati*, p.p. *pr̥ṣṭa-*, to ask. § 28, 12.

pat, the upper part of the back. Cf. *pēš*; Prs. *pušt*; P. *puṣt*; N. Bal. *p'ušt*. Kšm. *pata-*, behind; Bš. *ptī*, the back; Wai Kāfir, *pat*, behind.

Av. *paršti-*, Skr. *pr̥ṣṭ'a-*. §§ 3, 1*b*; 33, 5; 40, 1.

paīt (pl. *paītī*), m., cooked pulse. P. *paitī*.

pūt, adj., blown out, puffed out. *pūt-ʸēk*, to be puffed out.

Prs. *puk*, *pūk*; cf. *būk*, the windpipe; P. *pū*.

Skr. *p'ut-*, *p'ūt-*. §§ 8, 1; 33, 3; 40, 3.

patakkᵃ, f., a duck. Cf. *batᵃ*, *batkīyᵃ*.
Prs. *baṭ*, *baṭak*. § 52.

pᵃṭ, m., the forehead.

paṭ (pl. *paṭṭī*), the leaf (of a tree).
P. *paṭ*, the bark of a tree.
Skr. *patra-*. §§ 29, 1*d*; 39.

paṧ, a kiss. *paṧ-ʸēk*, to kiss.
Prs. *māc*; P. *maca*. § 40, 4.

pāṧ (pl. *pāṧī*), f., millet-bread.

ṗēṧ, the back; adj., far, distant. Cf. *pat*.
Cf. Hn. *pīcʿē*, behind. § 58.

pēṧuf, abstemiousness.

pīṧʸēk (p.p.f. *pīṧak*; aor. sg. 2, *pīṧ*, 3, *pīṧī*), to drip.
? Cf. Bal. *pʿīṭ-aγ*.

pūwᵃ (pl. *pūwī*), f., a hollow piece of ground.

pa-yēk (p.p.f. *payak*; aor. sg. 2, *pēyī*, 3, *payī*), to graze cattle.
P. *pōwul*.
O. Prs. √*pā-*, Av. √*pā-*, *pāiti*; Skr. √*pā-*, *pāti*; Phl. *pātan*, all meaning 'to protect.' Cf. H. 282, 156. § 40, 1.

pi-yēk (p.p.f. *piyak*), to string beads.
P. *pēwdᵃl*.
Skr. *prati* + √*vē-*, *-vayati*. § 40, 1.

pyūz, f., the mouth, face.
Borrowed from Prs. *pōz* (*pūz*), the snout of animals. Cf. P. *pōza*. For the insertion of *y*, see § 13, 4.

pazan-ʸēk (p.p.f. *pazanak*; aor. sg. 2, *pazan*, 3, *pazanī*), to recognize.
P. *pēžandᵃl*; W. *pazdan*.
Av. *paiti* + √*zan-*, Skr. *prati* + √*jñā-*, *-jānāti*. ELA. 312, EB. 422. §§ 3, 6; 18, 1*b*; 33, 6; 38, 1*b*; 40, 1.

rᵃ, see *hō*, 1.

rāī (pl. *raī*), f., a road.
Prs. *rāh*; Kurd. *rī*; P. *lār*.
Av. *raiθyā-*, Skr. *ratʿyā-*. ELA. 96. §§ 6, 4; 15, 1*a*.

rī, see *hir*.

rīʒan (pl. *rīʒannī*), m., rice.
Prs. *birinj*, Sm. *varinj*; P. *wrižē*.
Av. **vərənja-*, Skr. *vrīhi-*. Cf. Greek ὄρυζα. H. 208. §§ 6, 1; 15, 4; 32, 4.

rāχᵃ, f., truth. This word always appears as *a-rāχᵃ*, in which *a* is apparently the definite article. Possibly, however, the word is really *arāχᵃ*. Cf. the Av. form below.
P. *riṣ-tiyā*.
Av. *arš-*, etc. ELA. 188. §§ 4, 2; 15, 1*b*; 22, 4.

rūn (pl. *rūnī*), m., clarified butter, *ghī*.
Prs. *rōγan*, Kurd. *rūn*; Sq. *raun*.
Av. *raoγna-*, oil. H. 632. §§ 8, 3; 15, 1*a*; 18, 4.

randar, a mill.
P. *jaranda*; Bal. *jandar*.
Skr. *yantra-*. Metathesis of *r* in Ō. and P.

rang, manner, mode. Prs. § 96.

ras-ʸēk (p.p.f. *rasak*; aor. sg. 2, *rēsī*, 3, *rasī*), to spin (thread, etc.). The Causal of this verb is *raš-t-ak* or *rōš-ak*. §§ 28, 2*b*; 37, 2*b*.
Prs. *riš-tan*, *rēs-īd-an* to spin, *rēšam*, *abrēšam*, silk; Bal. *rēsaγ*, *brēsaγ*, to spin; P. *rēšᵃl*, *wrēšᵃl*, to spin.
Skr. √*riš-*, *rišati*, to tear. EB. 40, 318. §§ 3, 3; 15, 1*a*; 28, 2*b*; 37, 2*b*.

rōšak, see *rasʸēk*.

raštak, see *rasʸēk*.

rāṷai, m., a brother's son, a nephew.
P. *wrārᵃ*.
Av. *brātūirya-*, derived from **brāθrya-*. ELA. 277. Regarding the initial *r* instead of *ṷ*, see § 15, 4. §§ 4, 1*b*; 15, 4; 29, 1*c*, 1*e*, 1*g*; 41, 4.

rᵃwan, fire.

Assuming that the *an* is a termination, cf. P. *ōr*; Prs. *āδar*.

Eranian **āθr-*; Av. *ātar-*. H. 9.

rawas (pl. *rawasī*), com. gen. a fox.

Prs. *rōbāh*, Gl. *rūwās*; Bal. *rōpʿ-ask*.

Av. *raopiš* (?), Skr. *lōpāša-*. EB. 323.

ry-ēk (f. *ryak*), p.p. torn (of cloth). From this is formed a verb *rayēk*, to tear (trans.).

Prs. *darīdan*; Bal. *dira*$_{\gamma}$, *dina*$_{\gamma}$; P. *dāṛᵃl*.

Av. √*dar-*, Skr. √*dṝ-*, *dīryati* or *dṛṇāti*, p.p. *dīrṇa-*, to tear. EB. 78. In Ō. the initial *d* has been dropped. § 15, 2.

rī-yēk (p.p.f. *rīyēk*; aor. sg. 2, *rīnī*, 3, *rīna*), to shave. Cf. P. *χriyᵃl*.

ryūz (pl. *ryūzī*), a day.

Prs. *rōz*, G. *rūj*; Bal., *rōš*, (S.) *rōc*; P. *wraƈ*.

Av. *raoc-ah-*, Skr. *rōcis-*, light. Regarding the inserted *y*, see § 13, 4. §§ 8, 3; 13, 4; 38, 2; 108.

ṛūt (pl. *ṛūtī*), the cheek.

sᵃ or *sō* (f. and pl. *syī*), card., one. §§ 35 4; 63. Used as an indefinite article, § 101. *sō-ǰīstū*, twenty-one, § 63.

sa, see *syōk*, 1 and 2.

sū, 1, card., a hundred. With the higher hundreds, *sōh* is substituted, as in *dū sōh*, two hundred, § 63.

Prs. *ṣ(s)ad*; Bal. *saδ*; P. *sal*; L. *så*; Hn. *sau*.

Av. *sata-*, Skr. *šata-*. §§ 33, 6; 37, 2*a*; 63.

sū, 2, verbal particle, used with the past tense to form the future imperfect, and with the aorist to form the future, and corresponding in its use to the Prs. *bi*.

Connected with *syōk*, 2, to become, q.v. §§ 81*a*; 91.

sagᵃ, f., sand.

Borrowed from P. *šiga*. §§ 21, 2; 49.

saggarū, m., a kid. Cf. *gurū*.

sōh, see *sū*, 1.

sikak (pl. *sikacī*), com. gen., a hare.

? Cf. P. *sōē*; Skr. *šaša-*. ELA. 210.

sukal (pl. *sukalī*), m., a porcupine.

Prs. *sugur*, *sīχūr*, *sīχūl*; P. *škōṇ*.

Av. *sukurəna-*. H. 744; ELA 218. §§ 3, 4; 7, 1*b*; 17, 3; 21, 1*b*; 37, 1*a*.

sīχ, adj., straight. Cf. the next.

sūχ-aw-ᵛēk (p.p.f. *sūχawak*; aor. sg. 2, *sūχēwī*, 3, *sūχawī*), to prick, pierce.

Prs. *sēχ*, a spit; P. *sīχᵃl*, to pierce.

Skr. *šikʿā-*, a point. Cf. H. 762. §§ 22, 2; 37, 2*a*; 46.

sal, a year, in *inƈa sal*, this year.

Prs. *sāl*.

Av. *sarəδa-*. H. 691. §§ 3, 1*b*; 17, 3; 36.

sālᵃ, f., a feeling of cold, coldness.

Prs. *sard*, Kurd. *sār*; P. *sōṛ*, cold.

Av. *sarəta-*, cold. H. 731. §§ 4, 2; 17, 3.

samba, Saturday; *yak-samba*, Sunday, and so on.

Borrowed from Prs. *šamba*. § 49.

samāχᵃ (pl. *samāχᵃī*), f., a kind of grass, *panicum frumentaceum*.

Borrowed from P. *šamāχa*. § 49.

samsi-ṣ̌ī (pl. the same), an iguana.

Cf. Prs. *sūsmār*; P. *samsāra*.

samyā (pl. *samyaī*), f. vermicelli.

Hn. *samaī*, *siwaiyā̃*.

Skr. *samita-*, collected.

sma-yēk (p.p.f. *smayak*; aor. sg. 2, *smēyī*, 3, *smayī*), to string (beads, etc.).

sandas, card., eleven. §§ 18, 3*b*; 35, 4; 63.

sandasam, ord., eleventh. § 63.

spuk (pl. *spucī*), com. gen., a dog.

Prs. *sag*; P. *spai*.

Av. *span-*; Skr. *švan-*; Medic σπάκα (Herodotus, I, 110). The word is interesting. Ō. is the only modern Eranian language that preserves the original Medic form in its entirety. ELA. 198; H. 743. §§ 7, 2; 21, 1*b*; 40, 5*a*; 118.

spar-aw-ʸēk (p.p.f. *sparak*; aor. sg. 2, *sparēwī*, 3, *sparawī*), to wink, blink.

spūs-aw-ʸēk (p.p.f. *spūsawak*; aor. sg. 2, *spūsēwī*, 3, *spūsawī*), to fall (as leaves); to sit down.

spīw (f. and pl. *spīwᵃ*), adj., white.

Prs. *sipēd*, *safēd*, Kurd. *sipī*; M. *sūpī*.

Av. *spaēta-*, Skr. *švēta-*. H. 708. For P. *spīn*, see ELA. 200. §§ 6, 4; 14, 8; 33, 6; 40, 5*a*; 61; 93.

spīwʸēk, to become white. § 93.

sar, the head.

Perhaps a loan-word from Prs. *sar*.

Av. *sarah-*, Skr. *širas-*. §§ 3, 1*b*; 15, 1*b*; 37, 1*a*; 101.

sir (f. and pl. *sirᵃ* or *srᵃ*), adj., good.

Cf. Bal. *šarr*. §§ 49; 62; 97.

sūrī, in *sūrī maḫal barī zar*, N. of a certain time of the day, 8 or 9 a.m.

surtā, f., a certain musical instrument.

sirwā (pl. *sirwaī*), f., soup.

Borrowed from Prs. *šūrbā*, P. *šōrwā*. § 49.

saṛai, m., a man. P. §§ 10, 1; 55; 57; 75; 97; 101.

saṛdī, coldness, i.q. *sālᵃ*, q.v.

Borrowed from Prs. *sardī*, P. *sāṛa*. § 47.

sṛum, adj., immersed.

sisn-ʸēk (p.p.f. *sisnak*; aor. sg. 2, *sisn*, 3, *sisnī*), to neigh (like a horse).

Borrowed from P. *šašṇ-ēd-ᵃl*.

sūšᵃ (pl. *sūšᵃī*), a mountain ewe (f. of *wrai*).

sūš, (f. and pl. *sūšᵃ*), adj., red.

Prs. *surχ*; Bal. *suhr*; P. *sūr*.

Av. *suχra-*, Skr. *šukra-*. §§ 29, 1*b*; 97.

stᵃr, adj., great, big.

Borrowed from P. *star*. Cf. Prs. *suturg*; Bal. *istūr*.

Skr. *stʿūra-*, *stʿūla-*.

stirrak, a star. This word should probably be spelt *stᵃrak* (سْتُّرک), the spelling سْتِرک being a misprint.

Prs. *sitāra*; Av. *star-*. §§ 5, 2, 4, 5; 21, 5*a*; 33, 5.

stiṛ (f. and pl. the same), adj., weary (? *stʾṛ*).

Borrowed from P. *staṛai*, weary.

Av. *starəta-*, terrified. ELA. 206; H. 187. § 61.

sāt-ʸēk (p.p.f. *sātak*; aor. sg. 2, *sētī*, 3; *sātī*), to keep, take care of. P. *sātᵃl*. § 89.

swār, adj., mounted, on horseback.

Prs. *suwār*, *aswār*; P. *sōr*. Probably borrowed from Prs.

Av. **aspabāra-*, a rider.

syūγ, 1 (pl. *saγī*), f., a grape. § 57.

syūγ, 2 (pl. *saγadī*), f., a mother-in-law. § 57.

This can hardly be referred to Skr. *švašrū-*, and the numerous connected Eranian words such as Prs. *χusrū*. H. 487. Cf. *χšīnī*.

syākᵃ, f., shade, shadow.

Prs. *sāya*; Bal. *sāh*.

Skr. *cʿāyā*; Phl. *sāyak*. §§ 21, 5*b*; 37, 4.

sy-ŏk, 1 (p.p.f. *suk*; aor. sg. 2, *sū*, 3 *sa*), to break (of a rope).

sy-ōk, 2 (p.p.f. *suk*; aor. sg. 1, *s^{a}m*, 2, *sū*, 3, *sa*), to become.

Prs. *šud-an*; P. *šwul*, to become, originally, to go.

Av. √*šav-*, *šavaitē*; Skr. √*cyu-*, *cyavatē*, to go. The change of *š* to *s* shows that this word is borrowed from Prs. The true Ō. derivative of Av. √*šav-*, is *s-^{y}ēk*, q.v. §§ 49; 82; 86; 95; 101.

sa-yēk, 1 (p.p.f. *sayak*; aor. sg. 2, *sēyī*, 3, *sayī*), to abrade, grate, smoothe.

say-ēk, 2 (p.p.f. *sayawak*; aor. sg. 2, *sayēwī*, 3, *sayawī*), to bear, endure.

P. *sah^{a}l*.

Skr. √*sah-*, *sahyati*. §§ 13, 1; 37, 1*a*.

sīzgai (pl. *sīzgaī*), com. gen. a porcupine, a hedgehog.

Borrowed from P. *zižkai*, a porcupine; *zižˇ*, rough. The P. termination *kai* or *gai* is a diminutive suffix. §§ 48; 49; 51.

ṣabr, patience. Ar. § 62.

ṣrat, condition, circumstance.

Borrowed from Ar. *ṣūrat*.

šōl (pl. *šilī*, ? *š^{a}lī*), m., rice in the husk, paddy.

Borrowed from P. *šōla*.

Skr. *šāli-*. §§ 11, 2; 28, 2*a*; 46; 49.

šīnwū (pl. *šīnwaī*), f., spinach, potherbs, *sāg*.

Prs. *χašīn*, grey-blue; P. *šīn*, green.

Av. *aχšaēna-*, green. §§ 3, 7; 6, 4; 18, 1*b*; 28, 8*a*.

šīpī or *šippī*, f., milk. Av. *χšvipta-*. See GIP. I, ii, 415. Prs. *šīr* is from Av. *χšīra-*. §§ 14, 6; 28, 8*a*; 40, 7; 117.

šōr or *ṣōr* (pl. *šērī*), m., a city.

Borrowed from Prs. *šār*.

Av. *χšaθra-*. §§ 11, 2; 28, 1; 46; 49; 57.

šutī, in *dyō-šutī*, N. of a certain time of the day, 4-30 to 5 p.m.

šīw, f., night.

Prs. *šab*; Kurd. *šäw*; P. *špa*.

Av. *χšap-*. §§ 6, 2; 14, 5; 28, 8*a*.

ṣō, see *ṣ^{a}h*.

ṣ^{a}h, card., six. *ṣuwēs*, sixteen. In composition we have *ṣō-*, as in *ṣō-jīstū*, twenty-six; 25, 2; 63.

Prs. *šaš*; P. *špaž*; M. *āχšē*.

Av. *χšvaš*; Skr. *ṣaṣ-*. §§ 2, 1; 25, 2; 28, 8*b*; 63.

ṣ^{a}ham, ord., sixth. § 63.

ṣāχ, adj., dressed, wearing clothes.

ṣām, the act of showing, pointing out.

Cf. Prs. *ni-šān*; Bal. *šōn-dēa$_{γ}$*; P. *ṣōwul*. ELA. 377.

ṣmuṣ-^{v}ēk (p.p.f. *ṣmušak*; aor. sg. 2, *ṣmuṣ*, 3, *ṣmušī*), to slip, slide.

Cf. Bal. *k'isk'a$_{γ}$*, to slip; P. *ṣwai*, slippery; Sq. *znūs-am*, I slip.

ṣōr, see *šōr*.

ṣarwarak (pl. *ṣarwarakī*), m., a bat.

Cf. Prs. *šab-para*; S. Bal. *šap-car* (night-goer); P. *ṣāpērak*, *šōparak*.

ṣar-^{y}ēk (p.p.f. *ṣarak*; aor. sg. 2, *ṣar*, 3, *ṣara*), to turn, revolve (intr.).

ṣust-ak (p.p.f. *ṣustak*; aor. sg. 2, *ṣ̌īw*, 3, *ṣ̌awa*), to weep.

Prs. *girīstan*, *giryad*; Bal. *girē$_{γ}$*.

O. Prs. **grid-atiy*; Phl. *grīstan*. GIP. I, ii, 138. The original form of the Ō. root is contained in the present base commencing with *ṣ̌*.

See § 29, 1c. §§ 28, 10; 29, 1c; 62; 86.

ṣwān, 1, m., a shepherd.

Prs. *šubān*, *šuwān*; Bal. *šawānk*; P. *špūn*.

Av. *fšu-pāna-*, Skr. *pašumān*. H. 776; GIP. I, i, 12. §§ 3, 9; 4, 1*b*; 7, 5; 14, 5; 18, 1*b*; 28, 9.

ṣwān, 2, m., a king-crow.

ṣuwan (pl. *ṣuwanī*), m., an olive tree.

P. *ṣōna*.

ṣuwēs, card., sixteen. See *ṣ^{a}h*. § 63.

ṣwaišṭī, card., sixty.

Prs. *šast*; P. *špēta*.

Av. *χšvašti-*, Skr. *ṣaṣṭi-*. H. 781. § 63.

ṣē, card., three. In compounds this word takes the form *ṣīw*, as in *ṣīw-jīstū*, twenty-three. § 63.

M. *šarai*; Prs. *sih*; P. *drē*.

Av. *θrayō*, Skr. *trayas*. §§ 29, 1*e*; 63.

ṣī-būk, adj., rotten, stinking.

ṣak (pl. *ṣacī*), f., a flea.

Cf. P. *wraga*, *rwaga*, *rwaža*.

ṣaim, ord., third. See *ṣē*. § 63.

ṣī-mōl (pl. *ṣī-malī*), m., a field-embankment.

ṣa-mōt, adj., forgetting, forgetful.

Prs. *farāmōš*; Bal. *šamōša$_{\gamma}$*, to forget.

Skr. *pra*+√*mṛṣ-*, p.p. *-mṛṣṭa-*. H. 812. §§ 20, 1*a*; 29, 1*f*.

ṣīna, see *ṣīyēk*.

ṣēs, card., thirteen.

Av. *θridasa*. Cf. *ṣē*. § 63.

ṣīstū, card., thirty.

Av. *θrisata-*. Cf. *ṣē*. §§ 37, 2*b*; 63.

ṣas-^{y}ēk or (?) *ṣa-s^{y}ēk* (p.p.f. *ṣasuk*; aor. sg. 2, and 3, *ṣasī*), to become swollen, to swell. § 29, 1*f*.

? Cf. P. *paṛsēd^{a}l*, to swell; Bal. *sīya$_{\gamma}$*, to swell.

? Cf. Skr. *pra*+√*sp'āy-*, or *pra*+*ut*+√*sp'āy-*, *-sp'āyatē*. Or the Skr. √may be *švi-*, *švā-*, *švayati*. See EB. 347.

ṣī-ƀ-^{y}ēk (p.p.f. *ṣī-ƀawak*; aor. sg. 2, *ṣī-ƀēwī*, 3, *ṣī-ƀawī*), to send. Cf. *ƀ^{y}ēk*. The present stem shows that in this case the verb is causal.

With *ṣī*, ? cf. Av. *upairi*; Skr. *upari*; Prs. *bar*; P. *prē*. See H. 191. Geiger, ELA. 177 is doubtful as to the origin of P. *prē*. See § 29, 1*f*.

ƀ^{y}ēk is to be referred to the Av. √*šav-*, Skr. √*cyu-*.

The present verb comes from its causal, Skr. *cyāvayati*. § 29, 1*f*.

ṣawa, see *ṣustak*.

ṣawī, see *ṣiyōk*.

ṣīw, see *ṣē*.

ṣī-yēk (p.p.f. *ṣīyēk*; aor. sg. 2, *ṣīnī* 3, *ṣīna*), to buy.

Prs. *χarīdan*.

Skr. √*krī*, *krīṇāti*. §§ 29, 1*a*; 86.

ṣi-yōk (p.p.f. *ṣūk*; aor. sg. 2, *ṣērī*, 3, *ṣawī*), to give.

Skr. *prâpaya-*. The *ō* in the infinitive is a relic of the second *p*. So also the *w* of *ṣawī*. The aor. sg. 2, *ṣērī*, is probably a compound, *ṣēw*+*rī*, give to me. §§ 29, 1*f*; 76; 86; 97; 101.

ta, 1, adv., then (consecutive).

Hn. *tō*; S. Bal. *ta*.

Skr. *tāvat*; Prakrit, *tāva*. § 33, 1.

ta, 2, prep., of. When used with a pronoun of the first or second person, the form used is *tar*, not *ta*. Thus, *tar-mun*, of me; but *ta-saṛai*, of a man.

Cf. Kurd *dĕ*; P. *dā*. Geiger, ELA. 23, derives the latter from O. Prs. *tya-*, but if the Ō. *ta* has the same origin as *dā*, the existence of the form *tar* puts difficulties in the way of this derivation. I therefore derive it from Av. *antarə*; O. Prs. *a(n)tar*; Prs. *andar*, *dar*, see § 59. §§ 33, 4; 58-9; 64; 70; 73; 97; 101; 115.

tā, m., a paternal uncle, a father's brother.

P. *tr*^{a}.

Av. *tūirya-*; Skr. *pitṛvya-*. ELA. 234. §§ 4, 3; 15, 5; 33, 1; 97.

tī, see *t*^{y}*ēk*.

tū, pron. 2nd person, thou. Pl. *tyūs*, *tyūz*.

Prs. *tū*, Kurd. *tu*, *tü*; S. Bal. *tau*; P. *ta*.

O. Prs. *tuvam*; Av. *tūm*; Skr, *tvam*. §§ 8, 1; 13, 4; 33, 1; 64; 101.

For the plural we have Prs. *šumā*; N. Bal. *šawā*; Ossetic *sma*$_{\chi}$, *suma*$_{\chi}$; Š. *tamā*, Sq. *tamaš*. The last two commence with *t*, as in Ō. Cf. P. *tāsē*, *tāsū*, you. As Ō. frequently inserts a non-original *y* before *ū* (see § 13, 4), the original plural forms may be *tūs*, *tūz*.

Av. *yūžəm*, instr. *$_{\chi}$šmā*; Skr. *yūyam*, acc. *yuṣmān*. §§ 13, 4; 64; 116.

tak, see *t*^{y}*ēk*.

tāk (pl. *tacī*), m., a mountain torrent. *tāk-mirg*^{a}, f., a wagtail.

Cf. P. *tāk*, a precipice.

tōk (f. and pl. the same), adj., hot.

P. *tōd* (**tavd*); Prs. *taft*; Bal. *t'afa*$_{\gamma}$, to be hot.

Av. *tafta-*; Skr. *tapta-*. ELA. 240. The Ō. word has the *-ka*-suffix. §§ 11, 3; 21, 5*c*; 33, 1; 61.

ta-mīnak, *ta-mīnšak*^{a}, postpos. governing loc., up to, as far as.

Cf. Prs. *tā*, up to (H. 366).

tānd^{a} (pl. *tand*^{a}*ī*), f., acid food eaten as a relish = Prs. *qatiq*.

tūpī (pl. the same), f., buttermilk.

? Cf. P. *tarwē*.

trī, see *tatak*.

tar, 1, adj., passed, elapsed.

Skr. √*tṛ-*, *tarati*. §§ 15, 1*b*; 33, 1.

tar, 2, see *ta* 2.

tīrī, in *tīrī-sakkar*, m., moist sugar.

Prs. *tar*, moist.

Skr. *tar-uṇa-*. See H. 382. § 15, 1*b*.

tra-nak, adj., thirsty.

Derived from the present base *tra-* of *tatak*, to drink. Cf. *a*$_{\chi}$*wara-nak*, hungry. For the termination, cf. Prs. *-nāk* (GIP. I, ii, 183).

traṗ, running (the act).

Cf. P. *traṗ*, a leap. Hn. *taṛaṗ*, a leap, a bound. The last is a contraction of *taṛpaṛ*, which appears in the verb *taṛpaṛānā* or *taṛaṗnā*, to bound. *Taṛpaṛ* is derived by Platts (Hn. Dictionary, s.v.) from Skr. √*taṭ-* or *taḍ-* + √*sp'ar-* or *sp'aṭ-*.

trāš-^{y}*ēk* (p.p.f. *trāšak*; aor. sg. 2, *trēšī*, 3, *trāšī*), to pare, clip, cut.

Prs. *tarāš-īdan*.

Av. √*θwarəš-*, *θwaršti*, to cut. §§ 15, 1*b*; 28, 2*b*.

tra-yēk, (p.p.f. *trayak*; aor. sg. 2, *trayī*, 3, *traya*), to fear; to start, shy.

Prs. *tarsīdan*; P. *tarhēd*^{a}*l*.

O. Prs. √*tras-*, Av. √*tərəs-*; Skr. √*tras-*, *trasati*. H. 384. §§ 3, 1*b*; 15, 1*b*; 37, 7; 88.

taṛ^{a} (pl. *taṛ*^{a}*ī*), f., a tank, reservoir.

Skr. *taṭa-*, *taṭāka-*, *taḍāka-*, *taḍāga-*. § 16, 3.

tusk, adj., empty.

Prs. *tih*; P. *taš*; Bal. *t'usa*$_{\gamma}$, to faint; W. *tõšam*, Sq. *tīsam*. Old Eranian **tusa-*; Skr. *tucc'a-*. H. 404. The Ō. word has the *-ka*-suffix.

tišt-ʸēk (p.p.f. *tištak*; aor. sg. 2, *tišt*, 3, *tištī*), to run away.

P. *taštēd^{a}l*.

Av. *taršti-*. ELA. 232. §§ 5, 2; 28, 7; 33, 1, 5.

tēš̌ (f. *tēš̌^{a}*) adj., bitter.

Prs. *tal*$_{\chi}$; P. *trī*$_{\chi}$.

Phl. *tă*$_{\chi}$*r*. Cf. ELA. 235. §§ 9, 4; 29, 1*b*; 33, 1.

tat-ak (p.p.f. *tōtk*; aor. sg. 2 and 3 *trī*), to drink. Cf. *tranak*.

? Cf. Skr. √*tr̥p-*, *tr̥pati* or *tr̥pyati*, p.p. *tr̥pta-*, to be satiated. § 86.

tēṧan, heat, warmth. Cf. *tōk*.

tūwā, sunshine. Cf. *tōk*.

t-ʸēk (p.p.f. *tak*; aor. sg. 2 and 3, *tī*) to be standing up, to stand still, to stand.

O. Prs. √*stā-*, Skr. √*st'ā-*, *tišṭ'ati*. p.p. *st'ita-* (in Prakrit *ṭ'ia-*, *t'ia-*). Cf. Prs. *istādan*, H. 84. Or we may compare the Skr. passive, *st'īyatē*. § 33, 5.

tyūs, *tyūz*, see *tū*.

ṭānḍ (pl. *ṭanḍī*), m., the stalk of Indian corn.

P. *ṭānṭa*, Bal. *tānda*. Cf. Skr. *tantra-*, a thread. Possibly influenced by Skr. *kāṇḍa-*, a stalk.

ṭūṭ, in *ṭūṭ nim ryūz*, N. of a certain time of the day, about 3-30 p.m.

Cf. Hn. *ṭūṭnā*, to break. *Nim ryūz* means 'midday.'

ṧ^{a}, inan. pron. interrog. and indef., what? (§§ 2, 2; 31, 1; 73; 96; 101); anything (§§ 55; 74), something. Used substantively. The adj. form is *ṧēn*, q.v.

Prs. *ci*; P. *ṧa*.

O. Prs. Av., Skr. pronominal base *ci-*.

ṧōī, in *mār-ṧōī*, an ant, a diminutive suffix, like the Prs. *ca*.

Phl. *-cak*, see GIP. I, ii, 177. § 31, 1.

ṧaftarī, music.

ṧāk, adj., sour, acid.

Cf. Kšm. *ṧak^{u}*, sour. ? cf. Prs. *turuš*; P. *tr̥īw*; S. Bal. *trušp*, *trupš*. Cf. GIP. I, ii, 31. In Piśāca languages, such as Kšm., *t* frequently becomes *ṧ*.

ṧak^{a}, adv., as.

Compound of *ṧ^{a}*, what? and *ka*, that.

ṧēk, the bosom of a woman; (?) the nipple.

Cf. P. *tai*, the nipple of a woman's bosom; Sq. *tēj*; Sanglīcī *cījī*.

ṧak-aw-ʸēk (p.p.f. *ṧakawak*; aor. sg. 2, *ṧakēwī*, 3, *ṧakawī*), to cut, to pluck out by the roots.

Cf. P. *šūk-awul*.

ṧa-$_{\chi}$*al*, pron. adj., of what kind? See $_{\chi}$*al*.

ṧ$_{\chi}$*at*, adj., fat, fattened.

ṧēl, in *i-ṧēl^{a}*, on the left, towards the left.

? Cf. S. Bal. *cōt*, see EB. 68.

ṧal-ʸēk (p.p.f. *ṧalak*; aor. sg. 2, *ṧēlī*, 3, *ṧalī*), to bring or to take away (something animate); to take (a woman) in marriage.

ṧalyōr (pl. *ṧalyaraī*), m., a place where water is collected for purposes of irrigation.

ṧōm (pl. *ṧamī*), an eye.

Prs. *cašm*; S. Bal. *cam*.

Av. *cašman-*. §§ 20, 2; 31, 1; 57; 77; 101.

ṧ^{a}n, adv., today. § 66.

ʦān (pl. *ʦēnī*), a year.

ʦēn, interrog. pron. what? Used adjectivally. Cf. *ʦ*^{a} and *ʦōn*.

O. Prs. *ciyant-*, of what kind. §§ 9, 2; 18, 3*a*; 31, 1; 73.

ʦōn, pron. adj. indef., some.

Prs. *cand*.

Av. *cvant-*. §§ 11, 3; 18, 3*a*; 31, 4; 73; 97.

ʦinʣ^{a}*rai* (pl. *ʦinʣ*^{a}*raī*), m. the grey partridge.

P. *tanʦarai*, *tangʦarai*.

ʦang, in *i-ʦang*^{a}, adv., near.

? Cf. Skr. *utsanga-*, vicinity.

ʦangil, the forearm.

Borrowed from P. *ʦangal*. Cf. Prs. *cangāl*, *cangul*, a claw.

ʦuṇ-aw-^{y}*ēk* (p.p.f. *ʦuṇawak*; aor. sg. 2, *ʦuṇēwī*, 3, *ʦuṇawī*), to strain, sift.

P. *cuṇ*^{a}*l*. P. *cāṇawul* and Bal. *c'ānaγ* are borrowed from Hn. *c'ān-nā*.

Skr. √*cūrṇ-*, *cūrṇayati*, to grind, pulverise. §§ 7, 3; 12, 1*b*; 19, 2; 31, 1.

ʦār, card., four; *ʦarī-jīstū*, twenty-four (§ 63).

Prs. *cār*, *cahār*; P. *ʦalōr*; etc. ELA. 14.

Av. *caθwārō.*, Skr. *catwāras*. §§ 14, 9; 15, 1*b*; 31, 1; 34; 63.

ʦār^{a}*m*, ord., fourth. See *ʦār*. § 63.

ʦarēs, card., fourteen.

Prs. *cārdah*; P. *ʦwārlas*.

Av. *caθrudasa*; Skr. *caturdaša-*. §§ 9, 2; 15, 4; 29, 1*e*; 34; 35, 4; 63.

ʦarwōk (pl. *ʦarwēcī*), m. a generic term for goats or sheep.

P. *ʦārwai*, cattle, connected with P. *ʦar*, pasture.

ʦāṣtū, card., forty.

Prs. *cihil*, *cil*; P. *ʦalwēṣt*.

Av. *caθwarəsata-*, Skr. *catwāriṁšat-*. H. 454. §§ 28, 7; 63.

ʦāʦ (pl. *ʦacī*), m. a kind of partridge. §§ 26, 3; 57.

ʦawa, see *ʦ*^{y}*ēk*.

ʦwan-^{y}*ēk* (p.p.f. *ʦwanak*; aor. sg. 2, *ʦwēnī*, 3, *ʦwanī*), to shake out dust from clothes.

S. Bal. *candaγ*; P. *ʦanḍ*^{a}*l*. Cf. Kšm. *ʦaṇḍ*^{ü}, a blow. Phl. *candīnītan*, to stir. See H. 54. §§ 14, 8; 18, 3*b*; 31, 1.

ʦwarʦī, adj. torn, tattered.

? Cf. P. *ʦwal*, torn.

ʦ-^{y}*ēk* (p.p.f. *ʦawak*; aor. sg. 2, *ʦīw*, 3, *ʦawa*, *ʦa*), to move, go, proceed (=Hn. *calnā*).

Prs. *šudan*, to go, to become; P. *šwul*, to come, to go, to become; W. *cau-am*, Š. *sāo-am*, I go.

Av. √*šav-*, *šavaitē*. Skr. *cyu-*, *cyavatē*, to go. Cf. *syōk*, 2. §§ 29, 1*f*; 31, 3; 77; 92*a*.

-wa, pron. suff. of the third person singular, indicating any oblique case, including the accusative, but not the nominative. This is the same as *-a*, 2, the *w* being inserted for the sake of euphony after a vowel. See *-a*, 2. § 68.

wa, 1, and. §§ 99; 92*a*.

wa, 2 or *wi*, contracted pronoun of the third person, indicating the loc. sg. or pl., in him, in her, in it, in them.

Prs. *ō*, Kurd. *au*; P. *wa-r*.

O. Prs. *ava-*, gen. *avahyā*. See GIP. II, ii, 217. §§ 65-7.

waʦōk, see *wazyōk*.

wēgā, the evening, night.

Borrowed from Wazīrī P. Cf. Prs. *bēgāh*. § 52.

waγ-yōk (p.p.f. *waγak*; Aor. sg. 2, *wēs*, 3, *wēsa*), to enter.

A componnd of *wa* (Av. *aiwi*, Skr. *ab'i*) + *γōk*. See *aγōk*.

Skr. *ab'i* + √*gam-*, p.p. *ab'igata-*. The origin of the present stem is doubtful. ? Av. *aiwi-jasaiti*, he approaches, with syncope of *j*. § 86.

w^{a}k, *wak*, water.

Prs. *āb*, Kurd. *āw*; P. *ōba*; N. Bal. *āf*.

Av. Skr. *āp-*. With *-ka*-suffix. §§ 14, 5; 21, 5*a*.

w-ōk (p.p.f. *wāk*; aor. sg. 2, *wāw*; 3, *wawī*), to get, obtain.

Cf. Prs. *yāftan*, H. 1124.

Av. √*ap-*, *apayeiti*; Skr. √*āp-*, *āpnōti*. §§ 14, 5; 86.

waχ-ay-ēk (p.p.f. *waχayak*; aor. sg. 2, *waχaī*, 3, *waχayī*), to dig.

w^{a}lak (p.p.f. *w^{a}lk*), another form of *wri-yōk*, q.v., to bring, fetch, carry. The present base is taken from *wriyōk*. §§ 6, 4; 86; 101.

w^{a}n^a (pl. *w^{a}n^{a}ī* or *w^{a}nn^{a}ī*), f. a tree.

Borrowed from P. *wana*. See EB. 133. §§ 14, 1*a*; 57.

wan, f. a co-wife.

P. *b^{a}n*.

windzōk, m. the son of a co-wife, a woman's step-son.

P. *b^{a}nzai*.

wangū (pl. *wangūī*), m. a certain poisonous insect.

waqt, time. Ar. § 96.

wrai (pl. *wraī*), m. a mountain sheep. The f. is *sūš^a*, q.v.

Prs. *barra*, a lamb; P. *wrai*, a lamb; Bal. *gwarak'*, a lamb.

Skr. *uraṇa-*, a young ram. H. 211. §§ 15, 1*b*; 101.

wār, in *wār-ka*, adv., indicating doubt or ignorance, God knows.

w^{a}rī, see *wriyōk*.

wuraṛ-aw-^{y}ēk (p.p.f. *wuraṛawak*; aor. sg. 2, *wuraṛēwī*; 3, *wuraṛawī*), to drive away, turn out.

wr^{a}šṭ^a, a beard.

Probably connected with Prs. *rīš*, Av. *raēšah-*, but hardly with exactly the same original. See note by Horn on *rīš* in GIP. I, ii, 87.

wri-yōk or *w^{a}lak* (p.p.f. *wrūk* or *w^{a}lk*; aor. sg. 2, *w^{a}r*, 3, *w^{a}rī*), to take, fetch, carry.

Borrowed from P. *wṛ-^{a}l*. Cf. Prs. *burdan*; Bal. *baraγ*; Š. Sq. *vir-d*, he brings.

Av. √*bar-*, *baraiti*; Skr. √*b'ṛ-*, *b'arati*, to bear. The word is borrowed from P., for in Ō. original initial *b* = *b*. §§ 2, 1; 6, 4; 14, 7: 18, 3*a*; 41, 2; 86.

waṛk (pl. *waṛcī*), a worm, an insect.

wṛīy^a (pl. *wṛ^{a}ī*), f. a kind of food.

L. *waṛī*; P. *baṛaī*.

Skr. *vaṭikā*.

wēsa, see *waγyōk*.

w^{a}spal-^{y}ēk (p.p.f. *w^{a}spalak*; aor. sg. 2, *w^{a}spal*, 3, *w^{a}spalī*), to wring, squeeze out, press out.

? Skr. *ut* + √*sp'al-*, causal *ut-sp'ālayati*, to rend.

wust-^{y}ēk (p.p.f. *wustak*; aor. sg. 2, *wust*, 3, *wustī*), to rise, arise.

Cf. Bš. *uštā*, rise (impve.), Kšm. √*wŏth-*, to rise. Hn. √*ūṭh-*, to rise.

O. Prs. *us* + √*stā-*; Skr. *ut* + √*st'ā-*. §§ 7, 4; 28, 11; 33, 5; 79; 81; 83-4.

waṭk (pl. *waṭcī*), f. a walnut.

Cf. Skr. *akṣōṭa-*, which is probably a compound.

wawī, see *wōk*.

wyūk (f. *wyūk^a*), adj., dry.

Prs. *χušk*, Kurd. *vūšuk*; Bal. *hušk*; P. *wuc*.

O. Prs. *uška-*, Av. *huška-*; Skr. *šuṣka-*. O. very commonly inserts *y* before a long vowel. See § 13, 4. §§ 7, 4; 8, 2; 13, 4; 21, 4.

wz[a] (pl. *wzī*), a she-goat, a nanny goat.

Borrowed from P. *wuza*. Av. *būza-*, see LB. suppl. 37.

wuzm-aw-[y]ēk (p.p.f. *wuzmawak*; aor. sg. 2, *wuzmēwī*, 3, *wuzmawī*), to try, to test.

Phl. *ōzmūtan*; Prs. *āzmūdan*. H. 21. §§ 7, 4; 20, 2.

wazna, see *wazyōk*.

wēzār, adj., apart, separate.

? Cf. P. *wēzār*, displeased.

waz-yōk or *waδ-ōk* (p.p.f. *wazuk*; aor. sg. 2, *wazn*, 3 *wazna*), to kill.

Cf. Prs. *awzan*, slaying, overpowering, vigorous; P. *waž[a]l*, to slay.

Av. *aiwi*+√*jan-*, *-janaiti*, to slay; Skr. *abʿi*+√*han-*, *-hanti* or *-hanati*, to overpower. Cf. *δōk*, 2, and H. 134. §§ 13, 4; 14, 1*a*; 38, 4; 86; 88.

yā, or. Prs. § 99.

-yēn, pron. suff. of the first person plural, indicating the nominative case.

This is probably really *ēn*, with *y* prefixed (see § 13, 4). We may then compare the suffix *an* of the Pāmīr dialects, indicating the first person plural in the agent case. GIP. I, ii, 319. § 68.

yānγ, an embrace.

yānak, ash, ashes.

yāsp (pl. *yāspī*), m., a horse.

Prs. *asp*; Bal. *hāps*; P. *ās* (f. *aspa*); M. *yāsp*, Yd. *yasp*. Cf. EB. 4.

Av. *aspa-*; Skr. *ašva-*. §§ 3, 9; 4, 4; 13, 3; 40, 5*a*.

yaṣ-[y]ēk (p.p.f. *yasak*; aor. sg. 2, *yas*, 3, *yasa*), to boil (intr.).

P. *yaš-ēd[a]l*, to bubble, boil over.

Av. *yaēšyantīm*, seething; Skr. √*yas-*, *yasati* or *yasyati*; and √*yēṣ-*, *yēṣati*, to foam, bubble. Cf. ELA. 293. §§ 3, 1*b*; 13, 1; 37, 1*b*.

yēvyē-gar, m., a ploughman.

Cf. P. *yawē*, ploughing.

zōbal, adj., wounded.

Borrowed from P. *žōbal*. § 49.

zbān, the tongue.

Prs. *zabān*, from which it is probably borrowed.

Av. *hizū-*, Skr. *jihwā*. H. 650.

zbuš-[y]ēk (p.p.f. *zbušak*; aor. sg. 2, *zbūš*, 3, *zbušī*), to suck.

P. *zbēš[a]l*.

zab-aw-[y]ēk (p.p.f. *zabawak*; aor. sg. 2, *zabēwī*, 3, *zubawī*), to card (cotton, etc.).

P. *zamb[a]l* (this word is not given in the dictionaries, but is quoted by Ghulām Muḥammad Khān). Cotton is carded with a kind of bow. Hence, perhaps, we may compare Prs. *zamburak*, a cross-bow.

zgān (pl. *zgannī*), m., a division or section of a field.

zōk, see *δōk*, 1, 2, 3. § 32, 1.

zlī, m., the heart.

P. *zr[a]*; Bal. *zirdē*; M. *zīl*; Prs. *dil*.

Av. *zərəd-*; Skr. *hṛd-*, *hṛdaya-*. H. 571. §§ 6, 3; 17, 3; 35, 4; 38, 1*a*; 101, 105.

zāl (f. *zāl[a]*, pl. *zēlī*), adj., old.

Prs. *zāl*, see H. 648. The word is borrowed from Prs. It is quoted here, because its plural, *zēlī*, is also

used as the plural of *zark*^{a}, a woman. So also, in Bal., *zāl* is used to mean 'woman.' EB. 419.

zal-piē, com. gen., a grandparent, whether grandfather or grandmother.

A compound of *zāl*, old, and *piē*, a father, qq.v.

zēnī, f., the chin.

Prs. *zana*$_{\chi}$; Bal. *zanā*$_{\chi}$; P. *zana*; Š. *zingū*.

Av. *zanu-*, Skr. *hanu-*. §§ 18, 1*b*; 38, 1*a*.

zānṣak, the knee.

The original of *zān-* is Av. *zānu-*, Skr. *jānu-*. From this we have Prs. *zānū*; Bal., W. *zān*; Sq. *zong*; P. *zangūn*. Several of these have, as in the case of *zān-ṣak*, a termination added. In the Ō. word it was probably *-tra-ka*, *dra-ka*, or something of the sort, commencing with a compound consonant containing *r*. See § 29, 1.

zāṇyī (pl. the same), f., a crane.

P. *zāṇa*.

zār, card., a thousand.

Prs. *hazār*; P. *z*^{a}*r*.

Av. *hazaṅra-*, Skr. *sahasra-*. §§ 15, 1*b*; 25, 5; 38, 1*b*; 63.

zarī (f. the same), adj., small, little.

? Borrowed from Ar. *ṣarra*, a little.

zraḏ (pl. *zraḏī*), f., the red-legged partridge, the bartavelle.

Cf. P. *zarka*.

zur$_{\gamma}$*āt* (pl. *zur*$_{\gamma}$*attī*), m., curdled milk.

zark^{a} or *ḏark*^{a} (pl. *zarkī* or *zēlī*), f., a woman, a wife. For *zēlī*, see *zāl*.

Av. √*zar-*; Skr. √*jṝ-*, *jarati*, to grow old. Hence Prs. and Ō. *zāl*, old (m. and f.). In Bal. *zāl* has come to mean 'a wife' (originally 'old woman'). EB. 419. Similarly, we have Ō. *zark*^{a} (pl. *zēlī*), a woman. Cf. *zāl*. §§ 15, 1*b*; 38, 1*a*.

zišt-^{y}*ēk* (p.p.f. *zištak*; aor. sg. 2, *zišt*, 3, *zištī*), to seem bad, to be rejected.

zēṣ (pl. *za*$\check{s}\check{s}$*ī*), a thorn.

Cf. W. *za*$_{\chi}$. § 57.

zut, see *ḏut*.

zēṭ^{a} (pl. *zēṭ*^{a}*ī*), f., a cow-buffalo calf. P. *jōṭa*, Wazīrī *ḏēṭa*. §§ 46; 50.

zwa$_{\gamma}$^{a}*k* (pl. *zwa*$_{\gamma}$^{a}*cī*), m., the kernel of the pine-nut.

Cf. Prs. *cil-*$_{\gamma}$*ōza*. *zwa*$_{\gamma}$ may be a metathesis of $_{\gamma}$*ōza*.

zwandai (f., *zwandīy*^{a}), adj., living, alive.

Borrowed from P. *žwandai*. See H. 683. § 49.

zaw^{a}*rī* (pl. the same), f., a leech.

P. *žawara*; Bal. *zarā*$_{\gamma}$, *zarā*$_{\chi}$; Prs. *zālū*, *zalu*. Probably borrowed from P.

Skr. *jalūka-*. H. 664.

zwaṛand, adj., pendent, hanging.

Borrowed from P. *ḏwaṛand*. Cf. W. *žirövv-n*, to hang.

za-yēk (p.p.f. *zayak*; aor. sg. 2, *zēyī*, 3, *zayī*), to chew, masticate; to ask for; to wish for, desire; to search for things in the hair. It is uncertain whether all these meanings should be referred to the same root.

Prs. *jāwīdan*, *žāwīdan*, to ruminate. P. *žōwul*, *žōy*^{a}*l*.

Phl. *jūtan*. H. 415.

The Ō. word is probably borrowed from Prs. (§ 32, 1). §§ 32, 1; 38, 4; 49.

ziyaṛ, yellow. P. 97.

ža, see *hatak*.

INDEX OF WORDS, OTHER THAN ŌRMUṚĪ, OCCURRING IN THE FOREGOING PAGES.

The alphabetical order of the Indexes of Old Persian, Avesta, and Sanskrit is that of the alphabets of the respective languages. The alphabetical order adopted for the Indexes of the other languages is the same as that employed in the Ōrmuṛī Vocabulary, as explained on p. 53.

After each entry is given, first, the word or words in the Ōrmuṛī Vocabulary under which it is mentioned, and, next, the numbers of the sections, if any, in which reference is also made to it.

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W. *bār*; *bar*.

Sq. *cü*; *ku*; 59.
Sng. *cījī*; *ʦēk*.
W. *cauam*; *ʦʸēk*.

Sng. *daγ*; *dūwᵃ*.
M. *dehi*; *ʤōk*, 3.
W. *dīam*; *ʤōk*, 3.

Sq. *δaχtao*; *daẓʸēk*.

W. *gilgöc*; *gilʸēk*.
Š. *ganda*; *γanʤ*.

W. *γau*, *γü*; *giyōy*.
W. *γar*; *grī*.
Sq. *γērv*; *gurū*.
M. *γāwa*; *giyōy*.

Yd. *hō*; *hā*, 1.
W. *hüb*; *hō*, 2.
W. *hāt*; *hāšt*.

W. *kandak*; 76.

Š. *ǩu*; *χwai*.
Sq. *χü*; *χwai*.

W. *liχam*; *lasᵛēk*.
Sq. *lang*; *langīyᵃ*.
Š. *ling*; *langīyᵃ*.
W. *lōng*; *langīyᵃ*.

W. *māi*; *maī*.
W. *mūi*; *māī*.
Š. *maγ*; *maī*.
M. *māχ*; *az*; 22, 3; 64.
Sq. *meimān*; *mēmnī*.
Sq. *mån*; *milīz*.
M. *men*; *az*.
Š. *mūn*; *milīz*.
W. *mar*; *hir*.
M. *mīra*; *mēš*.
W. *mür*; *milīz*.
Š. *murd*, *mur*; *hir*.
W. *mōrtk*; 76.
W. *mōst*; *muṭ*.
Š. *māš*; *az*; 22, 3; 64; 116.
Sq. *mut*; *muṭ*.

W. *nastam*; *nwastak*.

W. *pōcam*; *paχᵛēk*; 108.
W. *panz*; *pēnʦ*.
Š. *pinz*; *pēnʦ*.
W. *pasdan*; *pazanᵛēk*.

Š. *paš*; *pus*.
W. *piš*; *pus*.
M. *piškē*; *pus*.
Sq. *pezam*, Š. *pēzam*; *paχᵛēk*; 108.

W. *qār*; *kōr*.

Sq. *raun*; *rūn*.
Sq. *rivdao*; *lupᵛēk*.

Š. *sāoam*; *ʦᵛēk*.

M. *sūpī*; *spīw*.

M. *šarai*; *šē*.

Sq. *tēj*; *ʦēk*.
Š. *tamā*; *tū*.
Sq. *tamaš*; *tū*.
Sq. *tīsam*; *tusk*.
W. *tōšam*; *tusk*.

M. *via*; *byōk*.
Š. *vēd*; *byōk*.
Š. Sq. *vird*; *wriyōk*.
W. *varēšn*; *braštak*, 2.

M. *we*; *bī*.
Sq. *wöχt*; *hāšt*.
Š. *wird*, *wir*; *hal*.
W. *wušk*; *γwaʦ*.
W. *wašukan*; *γwašᵛēk*.
Š. *wāšt*; *hāšt*.
W. *wazn*; *γwaštak*.

Yd. *yasp*; *yāsp*.
M. *yāsp*; *yāsp*.
W. *yār*; *hal*.
Š. *yurš*; *hiṇs*.
W. *yašk*; *hēnʦcī*.

M. *ze*; *az*.
W. *zü*; *az*.
W. *zaχ*; *zēš*.
M. *zīl*; *zlī*.
W. *zān*; *zānšak*.
Š. *zingū*; *zēnī*.
Sq. *zong*; *zānšak*.
Sq. *znūsam*; *šmušᵛēk*

M. *žia*, *dehi*; *ʤōk*, 3.
W. *žirövn*; *zwaṛand*.

PᴬŠTŌ.

aī; *-aī*.
ē; *-a*, 1; *a*, 2; *dī*, 1.
ōba; *wᵃk*; 45.
ā-γustᵃl; *γūnʤ*; *parγūnᵛēk*.
aχšai; *χšīnī*.
am, *yam*; *hā*, 2; 82.
ōm; *hām*.
aṇᵃl; *hinlᵛēk*.
ōr; *rᵘwan*.
ōrēdᵘl; *γōrᵛēk*.

ōṛa; *hinlᵛēk*.
ās; *yāsp*.
ōša; *hēnʦcī*.
ata; *hāšt*.
atiā; *haštāī*.
-av; 94.
aviā; *awāī*.
ōwa; *hō*, 2.
ōwalas; *awēs*.
ōwam; *hōm*.

✓*āwr-*, *āwrēdᵃl*; *amarᵛēk*; 3, 2; 47.

ba; 81.
bacai; *γwaʦ*.
bēgā; 45; 52.
bambara; *bambaraī*.
bᵃn; *wan*.
bᵃnzai; *windʤōk*.

brag; *bragai*.
brēšēd^{a}l; *bruš^{y}ēk*.
baṛaī; *wṛīy^{a}*.
baš^{a}l; *baš^{y}ēk*.
bata; *bat^{a}*.

cuṇ^{a}l; *ʦuṇaw^{y}ēk*.
cāṇawul; *ʦuṇaw^{y}ēk*.

da; 59; 115.
da-pāra; *pār^{a}*.
+*ē*; *dī*, 1.
dā; *ta*, 2.
dĕ; *da*, 2; 67.
drē; *ṣē*.
dar; *dal*; 17, 1; 47; 67.
dāṛ^{a}l; *ryēk*.
dwalas; *dwās*.
dwayam; *dīm*.

ḍūb; *ḍūb^{a}*.

ʣūē; *ʣāk*.
ʣī; *ʣōk*, 1.
ʣika; *ʣik^{a}*.
ʣwaṛand; *zwaṛand*.

-gai; *sīzgai*; 48.
gabīna; *pīn*.
gūng^{a}ṭ; *gingiṭ*.
gankap; *kap^{y}ēk*.
garawul; *giraw^{y}ēk*.

γāx́; 45.
γand^{a}l; *γanʣ*.
γanam; *gunum*; 48.
γar; *grī*.
γarēd^{a}l; *γir^{y}ēk*; *γwarḍ^{y}ēk*; 47.
γāṛa; 47.
γaṛēd^{a}l; *γiṛ^{y}ēk*.
γuṛēd^{a}l; *γaṛ^{y}ēk*.
γaṛ^{a}l; *gal^{y}ēk*; 48.
γuṛumbēd^{a}l; *γwarḍ^{y}ēk*; 47.
γāš; *gas*; 45; 46; 48; 49.
γaṭ; 47.
γuʦkai; *gažōī*.
γwā; *giyōy*; 48.
γwaša; *gāk^{a}*.
γwaṛ; *γwaṛ*.
γwaž; *gōy*.

hā; *hanwalk*.
hō; *hā*, 1.
hagaī; *hanwalk*.
haγ^{a}; *hō*, 1; *haʃō*; 69.
halak; *haluk*.
haṇēd^{a}l; *hiṇ^{y}ēk*.
hēṛai; *hiṛ*.
haṭaī; *haṭ*.

jaranda; *randar*.
jōṭa; *zēṭ^{a}*; 46; 50.

ka; *ka*, 1; 72.
-kai; *sīzgai*; 48.
kōg; *kṛāg^{a}*.
kūhai; *kūwai*.
kala; *kān*.
k^{a}lai; *kilīy^{a}*.
kōṇ; *kun*.
kuṇḍa; 45.
kārγ^{a}; *kaṇ^{a}-wraγ^{a}*; *kṛāγ*.
kraka; *krik*.
kṛ^{a}l; *kayēk*.
kṣē-nāst^{a}l; *nastak*.
kašr; *kišar*.
kōtān; *kōtal^{a}*.
kōṭa; *kōṭkīyī*.
kawul; *kayēk*.
kōž; *kṛāg^{a}*.

χ^{ō}; *χ^{ō}*.
χōb; *χwāw*.
χādamaī; *kirwās*.
χandā; *χan*.
χōr; *χwār*.
χōrayai; *χwarkai*.
χriy^{a}l; *rīyēk*.
χustan (*mā-χustan*); *χutan*.
χutan (*mā-χutan*); *χutan*.
χwarawul; *χwasraw^{y}ēk*.
χwaṛ^{a}l; *χwalak*.
χwāša; *χšīnī*.
χwašīna; *χšīnī*.
χōž; *χwaš*.

la; *likī*.
līd^{a}l; *d^{y}ēk*.
l^{a}g; *dušķī*.
lak; *lak*.
lalēd^{a}l; *lal^{y}ēk*.
laṇḍ; *laṇḍ*.
lēngai; *langīy^{a}*.
lār; *rāī*; 45.
lārγ^{a}; *drāγ*.
lar^{a}l; *dranak*.
laṛ^{a}l; *laṛ^{y}ēk*.
las; *das*.
lās; 51.
lasam; *dasam*.
lāsta; *lāst^{a}*.
lēš^{a}l; *daž^{y}ēk*.
lēw^{a}; *lēwū*; 17, 2.
lēwanai; *lawanai*; 17, 2.
lwast^{a}l; *hīštak*.
lwaža; *lwuž^{a}*.

ma-; *mak*.
-maī; *māī*.
maī; *maχak*.
mū; *da*.
mac; *m^{a}šī*.

maca; *paṫ*; 40, 4.
mādyān; *myāndēnī*.
maχ; *muχ*.
mā-χustan, *mā-χutan*; *χutan*.
muχ^{a}l; 22, 3.
mūlaī; *mūlaī*.
mlaχ; *mēχ*.
mēlm^{a}; *mēmnī*; 45.
mraē; *mrīg*.
maraī; *marīy^{a}*.
mōr; *māw^{a}*.
mōr; *myaur*.
mury^{a}; *mirg^{a}*.
maṛistān; *maṛistōn*; 46.
mṛāw; *māk*.
māš-pšīn; *χutan*.
māšai; *myāsī*; 13, 4; 47; 49.
mēš; *miš*.
muš^{a}l; *muχaw^{y}ēk*; *mutaw^{y}ēk*; 22, 3.
māt; *maštak*.
mūṭ; *muṭ*.
maž; *maī*.
mēž; *maī*.
mūž; *az*; 64.

nγarai; *γrai*; 45.
nŏh; *n^{a}h*.
nam; *n^{a}ham*.
nāst^{a}l (*kšē-nāst^{a}l*); *nastak*.
nāwa; *nāw^{a}*.
nawē; *nawī*.
nāwē; *nāwyī*.
nīwul; *nōk*.
nwar; 45.
nwaṛaī; *nōṛī*.
niyāy^{a}; *niyāk*.

pa; *pa*; 40, 1; 59.
pū; *pūt*.
pōh; *pōī*.
pal; *pāṛī*.
palāla; *parōṛ^{a}*.
plan; *pan*.
palaṭ^{a}l; *plaṭ^{y}ēk*.
p^{a}nḍ, *panḍ*, *panḍūkai*; *panḍūk*.
pinḏa; *pēnḏ*.
pinḏam; *panḏam*.
panḏōs; *panḏāštū*.
prē-; *ṣī-ṫ^{y}ēk*; 29, 1*f*.
pāra (*da-pāra*); *pār^{a}*.
părūn; *prān*.
pōrī; *pōrkai*.
prōwul; *prawak*.
prēžd^{a}l; *hatak*.
paṛsēdal; *ṣas^{y}ēk*.
pišō; *pus*.
pāš^{a}l; *prusnaw^{y}ēk*.
pšīn (*māš-pšīn*); *χutan*.
pušt; *pat*.
puštēd^{a}l; *pušt^{a}naw^{y}ēk*.
paitī; *paīt*.
paṭ; *paṭ*.
pēwd^{a}l; *piyēk*.
pōwul; *payēk*.
pōza; *pyūz*.
pēžand^{a}l; *pazaw^{y}ēk*.

rā; *hir*; 67.
rγaṛēd^{a}l; *lig^{y}ēk*.
rēš^{a}l; *ras^{y}ēk*.
rištiyā; *rāχ^{a}*.
rwaga; *ṣak*.
rawd^{a}l; *lup^{y}ēk*; 17, 1.
rwaža; *ṣak*.

ṛūnd; *hōnd*; 47.

sōē; *sikak*.
sah^{a}l; *sayēk*, 2.
sīχ^{a}l; *sūχaw^{y}ēk*; 46.
sχar; *χsir*.
sal; *sū*, 1.
samsāra; *samsī-ṣī*.
spai; *spuk*; 118.
spīn; *spīw*.
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sūr; *sūṣ*.
sāṛa; *saṛdī*; 47.
saṛai; *saṛai*; 10, 1.
sōṛ; *sāl^{a}*.
sāt^{a}l; *sāt^{v}ēk*.
star; *st^{a}r*.
staṛai; *stiṛ*.

šiga; *sag^{a}*; 49.
škōṇ; *sukal*.
šūkawul; *ṫakaw^{y}ēk*.
šil; *jīstū*.
šōla; *šōl*; 46; 49.
šamāχa; *samāχ^{a}*; 49.
šīn; *šīnwū*.
špa; *šīw*.
špūn; 45; *ṣwān*, 1.
šōparak; *ṣarwarak*.
špēta; *ṣwaištī*.
špaž; *ṣ^{a}h*.
šašṇēd^{a}l; *sisn^{y}ēk*.
šwul; *syōk*, 2; *ṫ^{y}ēk*.

ṣai; *χwarinṫ^{a}*.
ṣōna; *ṣuwan*.
ṣāpērak; *ṣarwarak*.
ṣōrēd^{a}l; *χ^{w}urt^{v}ēk*.
ṣōrwā; *sirwā*.
ṣwai; *ṣmuṣ^{y}ēk*.
ṣōwul; *ṣām*.

ta; *tū*; 64.
tai; *ṫēk*.

tōd ; *tōk*.
tāk ; *tāk*.
tanɗarai, *tangɗarai* ; *ɗinɖᵃrai*.
trᵃ ; *tā*.
tarhēdᵃl ; *trayēk*.
trīχ ; *tēṣ̌*.
traṗ ; *traṗ*.
trīw ; *ɗāk*.
tarwē ; *tūṗī*.
tāsē, *tāsū* ; *tū* ; 64.
taš ; *tusk*.
taštēdᵃl ; *tišᵗᵛēk*.

ṭānṭa ; *ṭānḍ*.

ɗa ; *ɗᵃ*.
ɗalōr ; *ɗār*.
ɗalwēšt ; *ɗāštū*.
ɗanḍᵃl ; *ɗwanᵛēk*.
ɗangal ; *ɗangil*.
ɗar ; *ɗarwōk*.
ɗārwai ; *ɗarwōk*.
ɗwal ; *ɗwarɗī*.
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wī ; *byōk*.
wu ; *būṗ* ; 81.
wuc ; *wyūk*.
wana ; *wᵃnᵃ* ; 14, 1a.
wrai ; *wrai*.
war ; *bar*.
war ; *hal* ; *wa*, 2 ; 67.
wraɖz ; *ryūz*.
wraga ; *ṣ̌ak*.
wrārᵃ ; *rāṣ̌ai*.
wrēšᵃl ; *rasᵛēk*.
writēdᵃl, *wuratēdᵃl* ; *braṣ̌tak*, 1 and 2.
wrižē ; *rīɖzan*.
wṛᵃl ; *wriyōk* ; 45.
-wīšt ; *šil* ; *jīstū*.
wāṣ̌ᵃ ; 49.
wuza ; *wzᵃ*.
wēzār ; *wēzār*.
wažᵃl ; *ɖzōk*, 2 ; *wazyōk*.

yam, *am* ; *hā*, 2 ; 82.
yašēdᵃl ; *yasᵛēk*.
yawē ; *yēvyēgar*.

zᵃ ; *az*.
zbēṣ̌ᵃl ; *zbuṣ̌ᵛēk*.
zambᵃl ; *zabawᵛēk*.
zana ; *zēnī*.
zangūn ; *zānṣ̌ak*.
zāṇa ; *zāṇyī*.
zᵃr ; *zār*.
zarka ; *zraɖz*.
zṛᵃ ; *zlī*.
zawāl ; *gatēs*.
ziyaṛ ; *ziyaṛ*.
ziž, *zižkai* ; *sīzgai* ; 48 ; 49 ; 51.

žōbal ; *zōbal* ; 49.
žaṛᵃl ; *ɖzaurᵛēk* ; 51.
žōwul ; *zayēk*.
žwandai ; *zwandai* ; 49.
žawara ; *zawᵃrī*.
žōyᵃl ; *zayēk*.

ẓdan ; *ažan*.

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ēbö ; 45.

ɖzēṭa ; *zēṭᵃ* ; 50.

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šēlē ; 46.
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wēgā ; 45 ; 52.
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Balōcī.

(Northern, unless marked 'S.').

ā ; *hō*, 1.
ā̃ ; *hā*, 2.
ē ; *a*, 2 ; *hō*, 1.

āf ; *wᵃk*.
ārtᶜ ; *hinlᵛēk*.
istūr ; *stᵃr*.

bīaɣ ; *byōk*.
bēnaɣ ; *ṗīn*.
baraɣ ; *wriyōk*.

brēsa$_\gamma$; *ras^{y}ēk*.
baška$_\gamma$; *baš^{y}ēk*.

(S.) *cam*; *ʦōm*.
(S.) *canda$_\gamma$*; *ʦwan^{y}ēk*.
(S.) *cōt*; *ʦēl*.

c'āna$_\gamma$; *ʦuṇaw^{y}ēk*.

dō; *dyō*.
dūhõ; *dūṇ*.
dina$_\gamma$; *r^{y}ēk*.
dāra$_\gamma$; *dranak*.
dira$_\gamma$; *r^{y}ēk*.
(S.) *dīt*; *dūṇ*.

guδ; *par$_\gamma$ūn^{y}ēk*.
gōχ; *giyōy*.
gā-mēš; *miš*.
gīn; *nĭnī*.
ganda$_\gamma$; *$_\gamma$anʣ*.
gira$_\gamma$; *glastak*.
girē$_\gamma$; *šustak*.
gurā$_\gamma$; *kaṇ^a-wra$_\gamma^a$*.
garra$_\gamma$; *$_\gamma$ir^{y}ēk*; *$_\gamma$warḍ^{y}ēk*; 14, 8.
gaṛa$_\gamma$; *giraw^{y}ēk*.
gīst; *jīstū*; 27, 1; 107.
gōš; *gōy*.
gwahār; *χwār*.
gwara$_\gamma$; *$_\gamma$ōr^{y}ēk*.
gwarak'; *wrai*.
(S.) *gwask*; *$_\gamma$waʦ*; 107.
gwaša$_\gamma$; *$_\gamma$wēk*; *$_\gamma$waž^{y}ēk*; 28, 4.
gwaza$_\gamma$; *$_\gamma$waštak*.

hau; *hā*, 1.
(S.) *haik*; *hanwalk*.
hāma$_\gamma$; *hām*.
hinka$_\gamma$; *hiṇ^{y}ēk*.
hāps; *yāsp*.
hapt; *hō*, 2.
hušk; *wyūk*.

jandar; *randar*.
jana$_\gamma$; *ʤōk*, 2.

k'i; *ka*.
k'āδēn; *kān*.
k'anda$_\gamma$; *χan*; 76.
k'isk'a$_\gamma$; *šmuš^{y}ēk*.

ling, lēng; *langīy^a*.

mahisk; *m^{a}šī*.
(S.) *makask*; *m^{a}šī*.
māχ; *az*; 64; 116.
mōr; *myaur*.
(S.) *murg*; *mirg^a*.
mira$_\gamma$; *mulak*.
masīt; *mizdik*.
muša$_\gamma$; *muχaw^{y}ēk*; *mutaw-^{y}ēk*.
māθ; *māw^a*.

nuh; *n^{a}h*.
ništa; *hãyēk*.
ninda$_\gamma$; *hãyēk*.

(S.) *pa*; *pa*; 40, 1; 59.
(S.) *pacag*; *paχ^{y}ēk*.
(S.) *pad*; *pāṛī*.
(S.) *pūšī*; *pus*.

p'āδ; *pāṛī*.
p'ilka$_\gamma$; *pīkak*.
p'anc; *pēnʣ*.
p'ancumī; *panʣam*.
p'anjāh; *panʣāštū*.
p'ušt; *pat*.
p'īṭa$_\gamma$; *pīʦ^{y}ēk*.

(S.) *rōc*; *ryūz*.
riḍ; *hiṛ*.
rōp'ask; *rawas*.
rēsa$_\gamma$; *ras^{y}ēk*.
rōš; *ryūz*.

saδ; *sū*, 1.
sāh; *syāk^a*.
sīh; 37, 2a.
suhr; *sūš*.

šamōša$_\gamma$; *šamōt*.
šōn dēa$_\gamma$; *šām*.
(S.) *šap-car*; *šarwarak*.
šarr; *sir*; 49.
šawā; *tū*.
šawānk'; *šwān*, 1.

(S.) *ta*; *ta*, 1.
(S.) *tau*; *tū*.
tānda; *ṭānḍ*.
(S.) *trupš, trušp*; *ʦāk*.

t'afa$_\gamma$; *tōk*.
t'ah-lang; *lwang*.
t'usa$_\gamma$; *tusk*.

vaš; *χwaš*.

whāv; *χwāw*.

zāl; *zāl*; *zark^a*.
zān; *zānšak*.
zāna$_\gamma$; *d^{y}ēk*.
zanāχ; *zēnī*.
zirdē; *zlī*.
zarā$_\gamma$, zarāχ; *zaw^{a}rī*.

Pišāca Languages.

Bš. *acu*; *hēnʦcī*.
Kšm. *aṣ*^{u}; *hēnʦcī*.
Khō. *ašru*; *hēnʦcī*.
V. √*išt-*; *ašt*^{y}*ēk*.
Bš. *uštā*; *wust*^{y}*ēk*.
Bš. *aštiʦ*; *aštēs*.
Bš. √*ut-*; *ašt*^{y}*ēk*.
Bš. *īʦ*; *hiṇs*.

Kšm. *balun*; *b*^{a}*l*.
Kšm. *bar*; *bar*.
Kšm. *biyĕ*; *bī*.

√*di-*, *ti-*; *ʣōk*, 3.
Kšm. *d*^{a}*h*; *dūṇ*.
Khō. *dik*; *ʣōk*, 3; 76.
Khō. *drōh*; *dr*^{a}.

My. *gī*; 21, 2.

Khō. *ganik*.; 76.
Kšm. *gāš*; 21, 2.

Kšm. *hĕkun*; *hinʦ*^{y}*ēk*.
Pš. *hanīk*; 76.

Bš. *kyẽ*; *kī*, 1.
Kšm. *kyut*^{u}; *kī*, 2.

Kl. *nisīk*; 76.
Kšm. √*ni-*; *nōk*; 18, 2.

Bš. √*prē-*; *prayēk*.
Khō. *prai*, Kl. *prau*; *prayēk*.
V. *pesumtiogo*; *ʣōk*, 3.
V. *pesumtinik*; 76.
Bš. *ptī*; *pat*; 33, 5.

Wai. *pat*; *pat*.
Kšm. *pata-*; *pat*; 33, 5.

Šṇ. *šidēgō*; 76.
Šṇ. *šidoiki*; 76.

√*ti-*, *di-*; *ʣōk*, 3.
Kl. *tyēk*; *ʣōk*, 3; 76.
My. *tus*; 64.

Kšm. *ʦaḳ*^{u}; *ʦāk*.
Kšm. *ʦaṇḍ*^{u}; *ʦwan*^{y}*ēk*.

Bš. √*wal-*; *hīštak*.
Kšm. √*wŏth-*; *wust*^{y}*ēk*.

Šṇ. *žīgō*; *cig*; 26, 2.

Modern Indo-Aryan Languages.

Hn. √*ūṭh-*; *wust*^{y}*ēk*.

Hn. *c'annā*; *ʦuṇaw*^{y}*ēk*.

Hn. *ḍūbā*; *ḍūb*^{a}.

Hn. *kā*; *ku*; 59.
Hn. *kē*; *kī*, 2.
Hn. *kō*; *kī*, 2; *ku*; 59.
Hn. *kar-kē*; 92*a*.

Hn. *mā*; *māw*^{a}.
Hn. *mōr*; *myaur*.

Hn. *pīc'ē*; *pēʦ*.

Hn. *sau*; *sū*, 1.
Hn. *samaī*, *siwaiyā*; *samyā*.

Hn. *tō*; *ta*, 1.
Hn. *taṛap*; *trap*.
Hn. *taṛapnā*; *trap*.
Hn. *taṛ-paṛ*; *trap*.
Hn. *taṛpaṛānā*; *trap*.
Hn. *ṭūṭnā*; *ṭūṭ*.

L. *bī*; *bī*.
L. *baṭērā*; *baṭēr*^{a}.

L. *girā̃*; *granyī*.
L. *garkaṇ*; *ɣwarḍ*^{y}*ēk*.
L. *gaṛgaṛ*; *ɣwarḍ*^{y}*ēk*.

L. *haṭṭ*; *haṭ*.

L. *kiũ*; *kī*, 1.
L. *kũ*; *kī*, 2.

L. *kīwẽ*; *kī*, 1.
L. *k'uh*; *kūwai*.

L. *laggṇā*; *lag*^{y}*ēk*.

L. *palālī*; *parōṛ*^{a}.

L. *så*; *sū*, 1.

L. *waṛī*; *wṛiy*^{a}.

Pn. *kanjar*; *kanʣar*.
Pn. *kappṇā*; *kap*^{y}*ēk*.
Pn. *tūsī̃*; 64; 116.

Sn. *guṛaṇ*^{u}; *ɣwarḍ*^{y}*ēk*.

Sn. *parār*^{u}; 15, 3.

Other Languages.

Ar. *ablaq*; *brâgai*.
Ar. *ðarra*; *zarī*.
Ar. *kitāb*; *kitāb*.
Ar. *maχlūq*; *maχlūq*.
Ar. *masjid*; *mizdik*.
Ar. *ṣabr*; *ṣabr*.
Ar. *ṣūrat*; *ṣrat*.
Ar. *waqt*; *wâqt*.
Turkī. *miltēq*; *milta*$_{\gamma}$.
Latin, *ovum*; *hanwalk*.
Greek, ὄρυζα; *rīðzan*; 15, 4.
Greek, περιστερά; *par*^{a}*šk*^{a}.

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RÉVISION DES CHAMPIGNONS APPARTENANT AU GENRE NOCARDIA.

PAR LE

CAPITAINE FROILANO DE MELLO,

Prof. à l'Ecole de Médecine de Nova Gôa, Directeur des Services Bactériologiques de l'Inde Portugaise;

ET

DR. J. F. ST. ANTONIO FERNANDES,

Assistant du Laboratoire de Bactériologie.

Smithsonian Institution
MAY 7 1920
National Museum

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RÉVISION DES CHAMPIGNONS APPARTENANT AU GENRE *NOCARDIA.*

par le

Capitaine Froilano de Mello, *Prof. à l'Ecole de Médecine de Nova Gôa, Directeur des Services Bactériologiques de l'Inde Portugaise et* Dr. J. F. St. Antonio Fernandes, *Assistant du Laboratoire de Bactériologie.*

INTRODUCTION.

Dans le travail que nous avons l'honneur de présenter à votre Société, il ne s'agit pas vraiment d'une révision systématique des champignons du genre Nocardia ; c'est plutôt un arrangement synoptique destiné à mettre un peu d'ordre dans le cahos qui est le sujet concernant ces fungi, en vue de faciliter la tâche de ceux qui se dédient à des recherches de ce genre. Que cette présentation termine avec les sages paroles de Chalmers et Christopherson (*Ann. of Trop. Med. and Parasit.*, Vol. X, no. 2, Sept. 1916):—

"The whole subject of the organisms causing actinomycosis is in such a confused condition at the present time, that any attempt, no matter how small, which endeavours to simplify their recognition must be of value to workers at disease in the tropics."

CARACTÈRES DU GENRE *NOCARDIA,* Toni et Trevisan 1889.

Filaments mycéliens de dimensions variées, sans gaîne ni septes, sans noyaux différenciés, simples ou ramifiés, se segmentant dans les cultures en courts articles bacilliformes et de nombreux corps arrondis cocciformes qui ne sont que des conidies ou arthrospores. Quelques espèces présentent des éléments claviformes dans leur phase parasitaire (*massues* des auteurs français, *club-like formations* des anglais). Prennent en général le Gram, sont acido-resistants quelquefois ; aérobies, aero-anaérobies, ou anaérobies strictes.

SYNONYMIE.

Streptothrix, Cohn 1875.
Actinomyces, Harz 1877.
Discomyces, Rivolta 1878.
Bacterium, Affanassief 1888.
Cladothrix, (Cohn 1875) *emend.* Macé 1897.
Oospora, Wallroth 1833, *applic.* Sauvageau et Radais 1892.

Smithsonian Institution
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DISCUSSION SUR LA PROPRIÉTÉ DE LA DÉSIGNATION GÉNÉRIQUE.

Le mot *Streptothrix* créé par Cohn pour le *Strept. foersteri* ne peut pas être employé pour les champignons de ce genre comme le voulait Rossi Doria, parce que

Corda l'avait deja employé pour quelques hyphomycètes parasitant le tronc des conifères, comme le *S. fusca*, Cohn 1839.

Le mot *Actinomyces* introduit en botanique par Meyen 1827-29 fut appliqué par Harz en 1877 pour l'*Actin. bovis*. Cette désignation qui a aussi été proposée par Gasperini en 1892 ne peut plus être acceptée, parce qu'elle est fondée sur la disposition rayonnée des filaments qui se trouve aussi chez d'autres genres comme les *Aspergillus*. Le parasite étudié par Meyen est l'*Actin. horkellii* tout à fait différent des champignons du genre Nocardia.

Sous le nom *Discomyces* Rivolta a décrit en 1878 deux champignons qui, d'après les recherches postérieures, ont été reconnus comme étant tout à fait différents du champignon *Actin. bovis* de Harz. Le mot *Discomyces* accepté aussi par Verdun a été dernièrement abandonné par cet auteur ; il appartient donc aux champignons de Rivolta, mais au cas où cette désignation pour ceux-ci serait impropre, le mot *Discomyces* conviendrait mieux pour un genre typique de la famille *Discomycetacae* Fries 1836.

Le mot *Bacterium* designe les bactéries et ne peut être utilisé pour les champignons comme le voulait Affanassief 1888.

Le mot *Oospora* a été employé par Sauvageau et Radais. Gueguen crée dans le genre *Oospora* la *Section I* pour désigner les *Nocardia* et la *Section II* pour les vrais *Oospora*. Ce mot est à rejeter non seulement à cause des différences entre les *Nocardia* et les *Oospora* de Wallroth, mais encore parce qu'il est plus moderne qui la designation *Nocardia*.

Voici les caractères différentiels :

Oospora.	*Nocardia.*
Mycélium plus large que celui de *Nocardia*.	Mycélium mince, bacilliforme.
Septes.	Pas de septes.
Noyaux intramycéliens différenciés.	Pas de noyaux intramycéliens différenciés.

Le mot *Cladothrix* créé par Cohn 1875 pour designer les champignons qui se différencient des *Leptothrix* pour avoir de fausses ramifications, a été appliqué par Macé qui lui donne l'interprétation suivante : *filaments bactériens droits ou sinueux, dépourvus de gaîne, ayant des ramifications latérales disposées irrégulièrement. Ces filaments se segmentent en de courts bâtonnets ou donnent des formes sphériques ou ovoïdes qui doivent être considérées comme arthrospores.* Comme Winogradsky a montré que la distinction primitive de Cohn n'avait plus lieu puisque l'on trouve aussi de fausses ramifications chez les *Leptothrix*, la désignation *Cladothrix* conviendrait parfaitement si elle n'était postérieure au mot *Nocardia*.

CARACTÈRES DIFFÉRENTIELS ENTRE LES GENRES *LEPTOTHRIX* ET *NOCARDIA*.

Leptothrix.	*Nocardia.*
Caract. importants.	Caract. importants.
Non ramifiés.	Ramifiés.
Gaîne gélatineuse.	Pas de gaîne.
Caract. secondaires.	Caract. secondaires.
Pas d'éléments claviformes.	Eléments claviformes dans la vie parasitaire

FILIATION BOTANIQUE DU GENRE *NOCARDIA*.

Sub-Phylum **HYPHOMYCÈTES.** Champignons dont la position botanique ne peut être définie précisément dans l'état actuel de nos connaissances.

Classe **Fungi imperfecti** ou **Mucedinae.** Représentent des formes imparfaites (Fuckel) ou conidiennes de champignons appartenant à une échelle supérieure et ne font pas la reproduction par un procédé determiné.

Sous-classe HYPHALES Vuillemin 1912. Éléments mycéliens constituées par hyphes. Aucune autre forme de multiplication des champignons supérieurs.

Ordre MICROSYPHONALES Vuillemin 1912. Mycélium composé de minces hyphes bacilliformes de 1 micron ou moins de larg; membrane hyphale épaisse et septuée.

GENRES.

Nocardia.

Toni et Trevisan 1889.

Mycelium bacillaire; Spores pas bien définies; Se cultive mieux aérobiquement.

Cohnistreptothrix.

Pinoy 1911.

Mycélium bacillaire; spores bien définies et entourées d'une membrane distincte. Se cultive mieux anaérobiquement.[1]

ESPÈCES DU GENRE *NOCARDIA*.

(Ordre alphabétique).

ESPÈCES.	SYNONIMIE.	SIÈGE D'OÙ L'ESPÈCE A ÉTÉ ISOLÉE.
Nocardia alba (Rossi Doria 1891).	*Streptothrix alba* R. D. 1891, *Actinomyces chromogenes* B. Gasperini 1890, *Strept.* I, II, III Almquist, *Actin. albus* Lehmann and Neumann, *Oospora guigardi* Sauvageau and Radais 1892, *Actin. albus* Gasperini 1890, *Oospora doriae* Sauv. and Radais 1892, *Strept. foersteri* Gasperini 1890 nec Cohn, *Strept. leucea* Foulerton 1902, *Strept. alpha* Price Jones 1900, *Strept. pyogenes* Caminiti 1907, *Actin. grisea* Krainsky 1914, *Actin. diastatica* Krainsky 1914, *Actin. cellulosae* Krainsky 1914, *Actin. nivea* Krainsky 1914, *Cladothrix alba* Macé.	Pseudotuberculose (cas de Massaglia 1904), pneumonie caséeuse (cas de Ayoama and Miyamoto 1901).
N. albida (Rossi Doria 1891).	*Strept. albido-flava* R. Doria 1891, *Actin. farcinicus* R. Doria 1891, *Noc. farcinica* R. Doria 1891, nec Trevisan 1889.	De l'air où elle semble assez rare.
N. albosporea (Krainsky 1914).	*Actin. albosporea* Krainsky 1914.	
N. appendicis, Chalmers et Cristopherson 1916.	*Strept. hominis* III Foulerton 1910, *Strept. hominis* IV Foulerton 1906.	Abcès cervical (Foulerton 1906), appendicite (Foulerton 1910).

[1] *N.B.*—Dans la révision des espèces nous avons inclu les *Cohnistreptothrix* dans le genre *Nocardia*.

ESPÈCES DU GENRE *NOCARDIA*.

(Ordre alphabétique).

Espèces.	Synonimie.	Siège d'où l'esp. a été isolée.
N. aquatilis (Peklo).	*Strept. aquatilis* Peklo 1910 ?	L'eau ?
N. asteroides (Eppinger 1890).	*Cladothrix asteroides* Eppinger 1890, *Strept. eppingeri* R. Doria 1891, *Oosp. asteroides* Sauv. and Radais 1892, *Noc. asteroides* Blanchard 1895, *Strept. hominis* Sabrazès and Rivière 1895, *Actin. asteroides* Mac Callum 1902, *Discomyces asteroides* Brumpt 1906, *Strept. freeri* Musgrave and Clegg 1907.	Mycétome (Musgrave and Clegg 1907), abcès du cerveau (Eppinger 1890), péritonite diffuse (Mac Callum 1902).
N. aurantiaca (R. Doria 1891).	*Strept. aurantiacus* R. Doria 1891, *Strept. aureus ?* Dubois St. Sévrin 1895.	L'air (R. Doria 1891), conjonctivite (Dubois St. Sévrin 1895).
N. berestneffi, Chalm. et Christoph. 1916).	*Strept. cas* I et II Berestneff 1897.	
N. beta (Price Jones 1900)	*Strept. beta* P. Jones 1900.	
N. bicolor (Trollender 1903).	*Actin. bicolor* Trollender 1903.	
N ? bonvicini (Bonvicini 1899)	*Strept. de Bonvicini.*	
N. bovis (Harz 1877).	*Actin. bovis* Harz 1877, *Bacterium actinocladothrix* Affanassief 1888, *Actinomycois hominis* (Affanassief 1888), *Nocardia actinomyces* Toni and Trévisan 1889, *Strept. actinomyces* R. Doria 1891, *Oospora bovis* Sauv. and Radais 1892, *Actin. bovis sulphureus* Gasperini 1894, *Clad. actinomyces* Macé 1897, *Discomyces bovis* Blanchard 1900, *Strept. hominis* III Foulerton 1905 nec 1910, *Strept. hominis* IV Foulerton 1910 nec 1906.	Mycétome actinomycosique, actinomycoses organiques, pseudotuberculoses pleuro-pulmonaires.
N. braziliensis (Lindenberg 1909).	*Discomyces braziliensis* Lindenberg 1909.	Mycétome.
N. brumi, Chalm. et Christoph. 1916.	*Strept. hominis* Hayo Bruns 1899.	
N. buccalis (Roger, Bory et Sartory 1909).	*Oospora buccalis* Roger, Bory, Sartory 1909, *nec Strept. buccalis* Goadby 1903, *Discomyces buccalis* Brumpt 1910.	Stomatite crémeuse et abcès amygdaliens (Rog., Bory et Sart. 1909).
N. candida (Petruscky 1898).	*Strept. candida* Petruscky 1898, *Strept. gedanensis* II Petruscky 1898, *Strept. lathridii* Petruscky 1898.	Crachat.
N. canis (Rabbé 1888).	*Cladothrix canis* Rabbé 1888, *Strept. caprae* Zschokke et Silberschmidt 1899, *Clad. caprae* Macé 1897.	Pseudo-tuberculose de chèvre (Silberschmidt 1899). Idem de chien ?
N. carnea (R. Doria 1891).	*Strept. carneus* R. Doria 1891, *Clad. carnea* Macé.	L'air (R. Doria 1891), Crachats d'une bronchite chronique (Baldoni).

ESPÈCES DU GENRE *NOCARDIA*.

(Ordre alphabétique).

ESPÈCES.	SYNONIMIE.	SIÈGE D'OÙ L'ESP. A ÉTÉ ISOLÉE.
N. carougeaui (Gougerot 1909)	*Discomyces carougeaui* Gougerot 1909, *Cohnistreptothrix carougeaui* Chalm. et Christoph. 1916.	Nodosités gommeuses juxta articulaires (Fontoynont et Carougeau 1909).
N. coelicolor (R. Muller 1904).	*Strept. coelicolor* R. Muller 1904, *Strept. coelicolor* Schurmann 1909, *Clad. coelicolor* Macé.	L'air.
N. chalcea (Foulerton 1905).	*Strept. chalcea* Foulerton 1905.	
N. chalmersi, de Mello et St. Antonio Fernandes 1917.	....	Salive d'un cheval (de Mello et St. Antonio Fernandes 1917).
N. chondri (Olsen 1897).	*Strept. chondri* Olsen 1897.	
N. christophersoni de Mello et St. Antonio Fernandes 1917.	....	L'air.
N. cinereonigra (Berestneff 1897).	*Strept. cinereonigra aromatica* Berestneff 1897.	
N. citrea (Krainsky 1914).	*Actin. griseoflavus* Krainsky 1914, *Actin. flavus* Krainsky 1914, *Strept. flava* S Felice 1904, *Strept. flava* Brins 1899.	
N. convoluta, Chalm. et Christoph. 1917.	....	Actinomycose humaine (Chalm. et Christoph. 1917).
N. cuniculi (Schmorl 1891).	*Strept. cuniculi* Schmorl 1891, *Actin. cuniculi* Gasperini 1894, *Strept. necrofora* Kitt 1906, ? *Bacillus necroseus* Salomonsen, ? *Necrosis bacillus* de Bang, ? *Bacillus diphterae vitulorum* Flugge, ? *Bacillus necroforus* Flugge.	Lésions ulcéreuses de la face des lapins (Schmorl 1891), plaies humaines difficiles à cicatriser (Schmorl), quelques cas de noma (Seifert 1901, Blumer et MacFarland 1901).
N. dassonvillei, Brocq Rousseu 1907.	*Streptothrix* de Gasperini 1890.	Conjonctivite humaine.
N. decussata (Langeron et Chevalier 1912).	*Discomyces decussatus* Langeron et Chevalier 1912.	Dermatose humaine
N. dichotoma (Macé 1888).	*Cladothrix dichotoma* Macé 1888 nec Cohn 1875, *Strept. chromogena* Gasperini 1890 *nec Actin. chromogenes* B. Gasperini 1890, *Strept. nigra* R. Doria 1890, *Oospora metschnikowi* Sauv. et Radais 1892, *Cladothrix brauner* Hesse 1892, *Clad. odorifer* Rullman 1895 *nec* Rullman 1898, *Strept. melanotica* Price Jones 1900, *Strept. humifica* Beijernick 1900, *Strept. nigrescens* Foulerton 1902, *Actin. erythrochromogenes* Krainsky 1914, *Actin. diastatico-chromogenes* Krainsky 1914, *Actin. virido-chromogenes* Krainsky 1914, *Actin. flavo-chromogenes* Krainsky 1914.	Sol, l'eau, l'air.

ESPÈCES DU GENRE *NOCARDIA*.

(Ordre alphabétique).

Espèces.	Synonimie.	Siège d'où l'esp. a été isolée.
N. enteritidis (Pottien 1902).	*Strept. enteritidis* Pottien 1902.	Entérites humaines (Pot. 1902).
N. equi (Dean 1900).	*Strept.* de Dean ? *Strept.* ? de Norris and Larkin.	Parasite du cheval.
N. erythrea (Foulerton 1910).	*Strept. erythrea* Foulerton 1910.	
N. farcinica (Trévisan 1889).	*Bacille du farcin* Nocard 1888, *Strept farcinica* R. Doria 1891.	Farcin.
N. foersteri (Cohn 1874).	*Strept. foersteri* Cohn 1874 *nec Strept. foersteri* Gasperini 1890, *Leptothrix oculorum* Sorokin 1881, *Oosporaf oersteri* Sauv. et Radais 1892, ? *Strept. aureus* de Dubois St. Sevrin 1895, *Strept. foersteri* Kruse 1896, ? *Strept. radiatus* Namyslowsky 1909, ? *Strept. cerebriformis* Namyslowsky 1909, *Strept. aerobie* de Silberschmidt 1901, *Cohnistreptothrix foersteri* Chalm. et Christoph. 1916.	Concrétions du canal lacrymal, dacryocystite).
N. foulertoni, Chalm. et Christoph. 1916.	*Strept. hominis* I Foulerton 1906, *Strept. hominis* Foulerton 1902.	Parasite humain (Foul. 1906).
N. fusca, Karwacky 1911.	....	Crachat d'un tuberculeux (Karw. 1911).
N. garteni (Brumpt 1910).	*Clad liquefaciens* II Garten 1895; *Disc. garteni* Brumpt 1910.	Empyème avec nécrose des vertèbres et des côtes (Garten 1895).
N. gedanensis (Scheele et Petruscky 1897).	*Strept. gedanensis* I Sch. et Petruscky 1897.	
N. gelatinosa (Peklo ?).	*Strept. gelatinosa*, Peklo 1910 ?	
N. glauca (Lehman et Schulze)	*Actin. glaucus* Lehm. et Schulze.	
N. goensis, de Mello et St. Antonio Fernandes 1917.	....	Sp. saprophyte isolée des lésions de vitiligo (Mello et Fernandes 1917).
N. graminarium (Berestneff 1897).	*Strept. graminarium* Berestneff 1897.	
N. hoffmani (Gruber 1891).	*Micromyces hoffmani* Gruber 1891.	De l'air à Vienne.
N. holmesi (Goedelst).	*Disc. holmesi* Goedelst.	
N. hominis (Berestneff 1897).	*Nec Actin. hominis* Bostroem = *N. bovis*; *nec Actin. hominis* Affanassief = *N. bovis*; *nec Actin. hominis* Wolf et Israel = *N. israeli*; *nec Strept. hominis* Sabrazès et Rivière = *N. asteroides*; *nec Strept. hominis* Hayo Bruns 1899 = *N. bruni*; *nec Strept. hominis* Foulerton 1902 = *N. foulertoni*;	Parasite humain (Berestn. 1897) des abcès et crachats.

ESPÈCES DU GENRE *NOCARDIA*.

(Ordre alphabétique).

ESPÈCES.	SYNONIMIE.	SIÈGE D'OÙ L'ESP. A ÉTÉ ISOLÉE.
	nec Strept. hominis II Foulerton 1910 = *N. londinensis*; *nec Strept. hominis* III Foulerton 1905 = *N. bovis*; *nec Strept. hominis* Foulerton 1910 = *N. bovis*; *nec Strept. hominis* III Foulerton 1910 = *N. appendicis*.	
N. indica (Kantack 1893).	*Oospora indica* Kantack 1893; *Strept. madurae* Vincent 1894; *Discomyces madurae* Vincent 1895: *Noc. madurae* Blanchard 1895; *nec Micrococcus pelletieri* Laveran 1906 et ses synonymes; *nec Noc. rivieri* Verdun 1912.	Agent du pied de Madura, (mycétome) (Kantack, Vincent et divers auteurs).
N. invulnerabilis (Acosta et Grande Rossi 1893).	*Clad. invulnerabilis* Acosta et Gr. Rossi 1893.	De l'air à Havane.
N. israeli (Kruse 1896).	*Cohnistreptothrix israeli* Pinov 1911; *Strept. israeli* Kruse 1896; *Strept. spitzi* Lignières 1903; *Actin. hominis* Brumpt 1910; ? *Actinobacillus lignieresi*, Brumpt 1910.	Mycétome actinomy cosique humain; ? actin. bovine et caprine de l'Argentine (Lignières et Spitz); ? méningite humaine.
N. krausei (Chester 1901).	*Strept. krausei* Chester 1901; *nec Noc. ponceli* Verdun 1912.	Abcès du maxill. inférieur.
N. lacertae (Terni 1891).	*Actin. lacertae* Terni 1891.	
N. lanfranchii (Sani 1916).	*Actin. lanfranchii* Sani 1916.	Actin glandulaire et ganglionaire du boeuf (Finzi 1916).
N. lasserrei (Verdun 1912).	*Noc.* sp. ? Lasserre 1904.	Ulcère du pharynx et de la lèvre supérieure (Lasserre 1904).
N. lehman (Peklo 1910 ?).	*Strept. lehman* Peklo.	
N. leishmani (Birt et Leishman 1902).	*Strept.* de Birt et Leishman.	
N. liguire, Urizer 1904.		
N. lingualis (Weibel 1888).	*Vibrio lingualis* Weibel 1888; *Spirosoma lingualis* Migula 1892; *Strept. lingualis* Bajardi 1900; *Clad. lingualis* Macé 1896; *Oospora lingualis* Gueguen 1910.	Stomatite crémeuse et abcès amygdaliens; Langue noire pileuse associeé au *Cript. linguae pilosae* (Gueguen).
N. liquefaciens (Hesse 1892).	*Clad. liquefaciens* Hesse 1892; *Strept. liquefaciens* Hesse 1892; *Strept. buccalis* Goadby 1903 *nec* Roger, Bory, Sartory 1909.	Actinomycose humaine.
N. londinensis, Chalm. et Christoph. 1916.	*Strept. hominis* II Foulerton 1906.	Parasite humain.

ESPÈCES DU GENRE *NOCARDIA*.

(Ordre alphabétique).

Espèces.	Synonimie	Siège d'où l'esp. a été isolée.
N. luteola (Foulerton et Jones 1910).	*Strept. luteola* Foulerton et Jones 1910.	Conjonctivite purulente (F. & J. 1910).
N. melanocycla (Krainsky 1914).	*Actin. melanocyclus* Krainsky 1914.	
N. melanosporea (Krainsky 1914).	*Actin. melanosporea* Krainsky 1914.	
N. microparva (Krainsky 1914)	*Actin. microparva* Krainsky 1914.	
N. minutissima (Burchardt 1859).	*Microsporum minutissimum* Burchardt 1859; *Trichotecium* de J. Neumann 1868; *Microsporum gracile* Balzer 1883; *Sporothricum minutissimum* Saccardo 1886; *Microsporoides minutissimus* Neveu Lemaire 1908; *Discomyces minutissimus* Brumpt 1910; *Oospora minutissima* Ridet 1911; *Nocardia minutissima* Verdun 1912.	Agent de l'erythrasme.
N. monospora (Schulze 1908).	*Actin. monospora* Schulze 1908.	
N. musculorum suis Duncker.	*Actin. musculorum suis* Duncker.	Actinomycose du cochon (sp. dub.)
N. muris (Schottmuller 1914).	*Strept. muris ratti* Schottmuller 1914.	Saprophyte dans la gorge des rats (Schottmuller) agent de la bronchopneumonie des rats (Ruth Tunnicliff 1916); Sang d'une femme avec Sodoku (Blake 1915).
N. odorifera (Rullmann 1898)	*Clad. odorifera* Rullman 1898.	Bronchite chronique.
N. orangica (Berestneff 1897).	*Strept. orangica* Berestneff 1897.	
N. parva (Krainsky 1914).	*Actin. parva* Krainsky 1914.	
N. panginensis, de Mello et St. Antonio Fernandes 1917.	....	Esp. saprophyte isolée d'une dermatose (de Mello et St. Antonio Fernandes 1917).
N. pelletieri (Laveran 1906).	*Micrococus pelletieri* Laveran 1906; *Oospora peletieri* Thiroux et Pelletier 1912; *Nocardia pelletieri* Pinoy 1912.	Mycétome rouge du Sénégal et de l'Afrique en général.
N. pinoyi, de Mello et St. Antonio Fernandes 1917.	....	Agent de l'erythrasme (de Mello et St. Antonio Fernandes 1917).
N. pluricolor (Terni 1894).	*Strept. pluricolor* Terni 1894; *Actin. gruberi* Terni 1894.	
N. ponceti, Verdun 1912.	....	Myomycose (Morhoof, Door, Poncet).
N. pseudotuberculosis (Hans Keller).	*Actin. pseudotuberculosis* Hans Keller.	

ESPÈCES DU GENRE *NOCARDIA*.

(Ordre alphabétique).

ESPÈCES.	SYNONIMIE.	SIÈGE D'OÙ L'ESP. A ÉTÉ ISOLÉE.
N. pulmonalis (Roger, Bory, Sartory 1909).	*Oospora pulmonalis* Roger, Bory, Sartory 1909.	Mycose pulmonaire, otite.
N. putridogenes (Veszpremi 1907).	*Clad. putridogenes* Veszpremi 1907.	Abcès du maxillaire (gen. dub.).
N. rivierei, Verdun 1912.	....	Abcès humains (Rivière).
N. rosea (Krainsky 1914).	*Actin. roseus* Krainsky 1914.	
N. rosembachi (Kruse 1896).	*Strept. rosembachi* Kruse 1896.	Dermatose erisypeloïde.
N. rubra (Ruis Casabó 1894).	*Strept. rubra* Casabó 1894; *Strept rubra* Kruse 1896 *nec Actin. ruber* Krainsky 1914.	Crachat.
N. saprophytica (Foulerton 1902).	*Strept. saprophytica* Foulerton 1902.	
N. silberschmidti (Chalm. et Christoph. 1916).	*Cohnistrept silberschmidti* Chalm. et Christoph. 1916, *Strept.* de Silberschmidt 1900.	Dacryocystite (Silberschmidt 1900).
N. somaliensis (Brumpt 1906).	*Indiella somaliensis* Brumpt 1906; *Indielopsis somaliensis* Brumpt 1913; *Discomyces somaliensis* Brumpt 1913.	Mycetome de la Somalilande française (Bouffard), Ballingal's disease ?
N. tenuis, Castellani, 1911.	*Cohnistreptothrix tenuis* Castellani 1911.	Tricomycose axillaire humaine.
N. thermophyla (Berestneff 1891).	*Actin. thermophylus* Berestn. 1891; *idem* Gilbert 1904; *Clad. thermophylus* Kedzior.	
N. thybiergei (Pinoy et Ravault 1909).	*Cohnistreptothrix thibiergei* Pin. et Rav. 1909; *Discom. thibiergei* Pin. et Rav. 1909.	Nodules souscutanés et region musculaire.
N. thiryei, de Mello 1917.	*Clad. mordoré* Thiry 1897; *Clad. polychromes* Thiry 1897; *Actin. rubidaureus* Lachner Sandoval 1898; *Noc. mordoré* Chalm. et Christoph. 1916.	Exsudat angineux avec oedème.
N. valvulae (Luginger 1904).	*Strept. valvulae destruens bovis* Luginger 1904.	Endocardite des bovidés (Luginger).
N. verrucosa, Chalm. et Christoph. 1916.	*Actin. verrucosus* Adler 1904.	
N. violacea (R. Doria 1891).	*Strept. violacea* R. Doria 1891; *Clad. violacea* Macé 1896; *Disc. violaceus* Berestn. 1897; ? *Actin. alni* Peklo 1910; ? *Actin. myricae* Peklo 1910.	L'air et l'eau (R. Doria).

RÉSUMÉ DES CARACTÈRES BIOL-

Nocardia.	Pomme de terre.	Gélatine (cult. et liquéf.).	Gélose.	Sérum coagulé.	Lait.	Bouillon.
alba ..	Colonies grisâtres ou jaunes.	Col. blanches. Liquéf. +.	....	....	....	....
albida ..	Cult. lente, confluente, faible, pellicule jaune; pigmentation du milieu négat.	Sur plaques: col. jaunes au centre opaque. Liquéf. tardive (20 jours).	Cult. abondante, verruqueuse à la périphérie, plâtrée, centre jaune (effl. blanche).	....	Col. grosses, discoïdes, milieu jaune paille, react. alcaline.	....
albosporea ..	Cult. rouge au début, efflorescence blanche.	Liquéf. +.	....	....	....	....
americana ..	....	....	....	....	....	....
apendicis ..	Cult. jaune.	Liquéf. +.	....	Liquéf. +.	....	....
aquatilis ..						
asteroides ..	Col. saillantes, verruqueuses, blanches au début, plus tard rouge brique, le centre plus foncé. Effl. blanche.	Cult. jaune. Liquéf. —.	Col. blanches, verruq., ochraces plus tard, confluant en pellicule plissée et rouge.	Cult. jaune. Liquéf. —.	Acide au début devient alcalin plus tard. Pas de coagulation.	Petites écailles au fond; milieu clair.
aurantiaca ..	Col. plates, jaune orange, sans filaments sporifères.	Col. circulaires, plates, circuses, effl. blanche. Liquéf. —.	Col. circulaires jaunes, centre plissé, confluant en pellicule verruq., jaune orange, sans effl.	....	....	....
berestneffi ..	Nil.	Nil.	....	+		
beta ..	+	Liquéf. +. avec pigment.	....	....	....	....

OGIQUES ET CULTURAUX DES *NOCARDIA*.

Aspect et odeur.	Aérobie ou Aéro-anaérobie.	Act. diast.	Coloration.	Morphologie, dimensions.	Act. pathogène.	Inoculations.
Cultures en général blanches. Pas de pigment.	....	+	....	....	....	+ (pseudotuberculose).
Odeur de moisi dans le lait.	Aérobie.	....	....	....	—	—
....	....	+				
....	Aéro-anaérobie.					
....	Aéro-anaérobie.					
....	Aéro-anaérobie.	....	....	Mycélium de 0, 2 micron; pas de spores.	+	Lapin, cobaye, singe (nodules caséifiés).
....	Aérobie str.	....	....	....	—	
Aspect jaune paille clair.	....	—	....	....	....	—

RÉSUMÉ DES CARACTERES BIOL-

Nocardia.	Pomme de terre.	Gélatine (cult. et liquéf.).	Gélose.	Sérum coagulé.	Lait.	Bouillon.
bicolor ..						
bonvicini ..						
bovis ..	Col. isolées, membraneuses, circulaires en grain de moutarde; pellicule gris jaunâtre, plissée. Effl. blanche, jaune orange ou jaune rose. Pigm. noire ou brunâtre.	Lent develop., col. blanc jaunes. Liquéf. + depuis le 7me jour. Pigm. +.	Col. dures, blanches, sphériques devenant cratériformes. Effl jaune ou grisâtre (idem sur *gél. glycer*).	Faible develop. petites col. rondes. Liquéf. −. Pigm. −.	....	Flocons blancs; liquide clair ou légèrement roux.
braziliensis ..	Cult. au début rose, plus tard jaune orange. Pigm. brunâtre.	Liquéf. −. Pigm. ±.	Col. rose violacées sur *Sab-gluc.*	Col. blanches.	Pellicule jaune orange, pas de coag.	....
bruni ..	Faible develop.	....	Faible develop.	....	....	....
buccalis ..	..	....	..	....	....	Bon develop sur *bouillon maltosé.*
candida ..	Cult. à surface veloutée, brillante, effl. blanche.	Liquéf. +.	....	Liquéf. +.	....	....
canis ..	Cult. mince, blanche devenant rose brunâtre. Col isolées rondes, sèches. cratériformes.	Col. au centre brun, claires à la périph., formées de filaments radiés, très minces. Liquéf. −.	Cult. sèche. verruqueuse, blanc jaune. Effl. blanche. Quelques col. cratériformes.	....	Pellicule blanc rose à la surface. Pas de coag.	Col. blanches, sèches, mince depôt. Milieu clair ou plein de flocons.
carnea ..	Cult. verruq., couleur de chair ou rouge orange.	Col. radiées. Effl. blanc rose. Liquéf. −.	Col. circulaires couleur de chair ou rouge orange.	....	Nil.	E'cailles à la surface, souvent flocons au fond.

OGIQUES ET CULTURAUX DES *NOCARDIA*.

Aspect et odeur.	Aérobie ou Aéro-anaérobie.	Act. diast.	Coloration.	Morphologie, dimensions.	Act. pathogène.	Inoculations.
....	Aéro-anaérobie (cult. anaer. faibles).	—	Gram + Ziehl — (les tissus parasités présentent souvent des élém-acido resistants).	Eléments claviformes.	+	Boeuf, cheval, porc, lapin et cobaye.
....	....	....	....	+		
....	Aéro-anaérobie.	....	Gram +.			
....	Aérobie.	....	....	Mycélium de o, 7 à o, 8 ; pas de form. claviformes.	....	Cobaye (pseudo-tub. généra. lisée).
....	Aéro-anaérobie.					
....	Aéro-anaérobie.	....	Ziehl +.	....	+ (chien, chèvre)	Cobaye, chat lapin, chien, chèvre (caséification).
....	....	....	Gram +.	....	....	Lapin, cobaye (pseudo-toberc.).

RÉSUMÉ DES CARACTÈRES BIOL-

Nocardia.	Pomme de terre.	Gélatine (cult. et liquéf.)	Gélose.	Sérum coagulé.	Lait.	Bouillon.
carougeaui ..	....	....	....	....	....	....
chalcea ..	Cult. rouge ..	Liquéf. +.	....	....	....	....
chondri ..						
cinereo-nigra ..	....	Liquéf. +. Pas de pigm.	Col. jaune grisâtre sur *gél. malt.*	....	....	....
citrea ..	Col. jaunes ..	Liquéf. +. Pigm. −.	Col. jaunes sur *gél. malt.*	....	....	....
coelicolor ..	Col. blanches, plissées se présentant en ondulations concentriques bleues, vertes ou violaces. Le milieu se teint de la même façon.	....	Aspect plâtré lorsque l'on joint du sérum avec glycogène ou dextrine. Pigm. brunâtre, sur gél. dextrinée.	....	Coag. lente. Pigm. en présence d'amidon.	Flocons au fond, souvent zones concentriques à la partie sup.
convoluta ..	Faible develop., cult. couleur de peau.	Cult. coleur depeau. Liquéf. −. Pas de pigm. Effl. blanche.	....	Liquéf. +.	Nil.	....
cuniculi ..	Nil.	Liquéf. −.	....	Petites col. blanc grisâtres finement radiées.	....	Faible develop., trouble uniforme.
dassonvilliei ..	....	Petites col. rondes et blanches.	....	....	....	....
decussata ..	....	....	....	....	....	....

OGIQUES ET CULTURAUX DES *NOCARDIA*.

Aspect et odeur.	Aérobie ou Aéro-anaérobie.	Act. diast.	Coloration.	Morphologie, dimensions.	Act. pathogène.	Inoculations
....	Anaérobie.	....	Gram +.	....	+ homme.	
....	....	—				
....	....	—				
....	....	+				
La matière color. se forme en présence de subst. amylaces et devient rouge par les acides et verte par les alcalis.						
Cult. faciles surtout sur milieux alcalins.	Aéro-anaérobie.	—	Gram +. Ziehl —.	....	....	Nil.
....	Anaérobie.	....	Gram +.	....	Lapin, rat.	
Efflorescence.	Aérobie str.	—	Gram +.			
Cult. lentes sur tous les milieux ; col. blanc laiteuses, proéminentes, avec un bouton central et souvent des sillons cruciformes.	....	....	....	Dissociation du mycélium en articles de 1 à 1, 5 micron. arrondis.	Douteuse.	

RÉSUMÉ DES CARACTÈRES BIOL-

Nocardia.	Pomme de terre.	Gélatine (cult. et liquéf.).	Gélose.	Sérum coagulé.	Lait.	Bouillon.
dichotoma ..	Pellicule grise, ou gris jaune, plissée, épaisse, consistente; effl. blanche; Pigm. gris foncée.	Petites col. blanches, auréole brune à la périph., develop. tardif. Liquéf lente.	Pellicule épaisse, luisante, grisâtre, très adhérente. Effl. blanche. Pigm. brunâtre (*gél. glyc.*).	....	....	Flocons blancs en suspension, milieu clair; pigm. brunâtre.
enteritidis ..	Cult. brune.	....	....	....	....	....
equi ..	Nil.	Nil.	....	Nil.	....	....
erythrea ..	Nil.	Liquéf. +.	....	....	....	....
farcinica ..	Col. circulaires, grisâtres, confluant en pellicule verruqueuse ou plissée. Effl. blanche.	Cult. lente. Liquéf +. Prend la couleur brune lorsqu' acide.	Petites col. opaques, circulaires, blanc jaunes, souvent pellicule. Effl. blanche.	....	Pas de coagulation.	Amas blancs irréguliers tombant au fond; écailles à surface comme gouttes de graisse (sur tout dans b. *glycériné*).
foersteri ..	Cult. rapide, plâtrée, l'amidon se transforme en sucre.	Sphéres blanches, poils courts, radiés, irregul. à surface.	Petites col. rondes confluant en pellicule mamillonée plissée, grisâtre. Effl. blanche.	....	....	Petites col. grisâtres tombant au fond.
foulertoni ..	Nil.	....	Col. petites, blanches (*gél. glycér.*).	....	....	....
fusca ..	....	....	....	....	....	....
garteni ..	Col. blanches, pigment. verte.	Petits points blanc verdâtres. Liquéf. +.	Cult. blanc grisâtre, surface sillonnée (sur *gél. gluc.* et *gél. glycér.*).	Trainée blanche plissée après 48 b.	Nil.	Nil (id sur *eau peptonée*).

OGIQUES ET CULTURAUX DES *NOCARDIA*.

Aspect et odeur.	Aérobie ou Aéro-anaérobie.	Act. diast.	Coloration.	Morphologie, dimensions.	Act. pathogène.	Inoculations.
....	....	....	....	Longs filaments mycéliens, formes spirillaires, largeur de 0, 4 micron.		
....	Aéro-anaérobie.					
....	Aéro-anaérobie.					
....	....	—				
....	Aérobie str.	....	Gram +. Ziehl —.	Filaments ramifiés, enchevêtrés, de 0, 25 de larg.	+ (farcin des boeufs).	Lapin, chèvre, boeuf.
Odeur de moisi sur bouillon.	Aéro-anaérobie.	....	....	Elem. rectilignes, ondulés, irreg., spiril. 0, 5 à 0, 6.	+ (homme).	—
.....	Aér. str.	....	....	Pas d'elém. claviformes.		
Couleur des cult. jaune grisâtre.						
....	Aér. str.	....	....	....	+ ? (homme).	Lapin, cobaye.

RÉSUMÉ DES CARACTÈRES BIOL-

Nocardia.	Pomme de terre.	Gélatine (cult. et liquéf.).	Gélose.	Sérum coagulé.	Lait.	Bouillon.
gedanensis ..	....	Cult. blanche.	Cult. blanche, forte odeur.	....	....	....
gelatinosa ..						
glauca .	....	....	....	....	....	....
graminarium ..	Cult. blanche.	Liquéf. +.	....	Liquéf. −.	....	....
hoffmani ..	....	Liquéf. −.	....	Liquéf. −.	....	....
holmesi ..						
hominis ..	....	Cult. difficile.	....	....	....	....
indica ..	Col. irrég., sphériques, plus ou moins, colorées selon l'acidité du milieu. Effl. blanche, pas de pigm.	Cult. blanche peu abondante. Liquéf. −.	Col. consistentes, blanches au centre, rouges à la périphérie (*gél. glycér.*).	Col. rose claires ou blanches, peptonisation. (Sur *sérum du cheval*)	Pas de coagulation; peptonisation lente.	Sphères floconneuses au fond; milieu clair (idem sur *b. végétal*, les flocons pouvant se fixer au tube, léger trouble, effl. blanche).
invulnerabilis ..	Larges traits de petites col. blanches, plâtrées; pigm. noire. Odeur de terrau.	Col. blanches, veloutées. Liquéf. +. Pigm. −.	Petites col. blanc sâle; pellicule blanche à la surface, jaune par dessous, adhérente (par piqûre).	Bouchon jaune, adhérent au tube, coagulation avec la caséine au fond.		
israeli ..	....	Nil.	Col. en gouttes de rosée, devenant plus tard jaunes.	....	....	écailles au fond.

OGIQUES ET CULTURAUX DES *NOCARDIA*.

Aspect et odeur.	Aérobie ou Aéro-anaérobie	Act. diast.	Coloration.	Morphologie, dimensions.	Act. pathogène.	Inoculations.
....	Aéro-anaérobie.					
Cult. vertes. Ne se developpe pas au-dessous de 35°.						
....	Aéro-anaérobie.					
Pas de bonnes cult. sur aucun milieu.	Aéro-anaérobie.	....	....	Myc. ramifié, élém. clavif.		
....	Aéro-anaérobie.					
Les meilleurs mil. de cult. sont les infusions végétales acidulées avec 1 goutte de sol. dàcide tartrique a 1/500 pour 30 c.c. de la sol. végét.	Aéro-anaérobie.	....	Gram +. Ziehl −.	....	+ (homme).	−
Cult. difficiles. Le meilleur milieu est la *gélose sérum* qui donne des col. rouges.	Aéro-anaérobie.	....	....	....	+ (homme).	Lapin, cobaye.

RÉSUMÉ DES CARACTÈRES BIOL-

Nocardia.	Pomme de terre.	Gélatine (cult. et liquéf.).	Gélose.	Sérum coagulé.	Lait.	Bouillon.
krausei ..	Nil.	Nil.	Col. jaunes (*gél. glycér.*) bon develop. sur *gélose.*	Elem. claviformes.	....	Cult. rapide, pellicule.
lacertae ..						
lanfranchii ..	....	....	....	....	....	....
lasserrei ..	Nodules jaunes; effl. blanche, couleur de neige.	....	Col. séparées, jaunes, entourées d'une couche blanche.	....	....	....
lehman ..						
leishmani ..	....	....	....	....	....	....
lingualis ..	Col. jaunes ..	Liquéf. +.	Nil, petites col. blanches sur *gél. malt.*	....	....	Flocons blancs au fond.
liquefaciens ..	Cult. jaune paille, pas de pigm.	Liquéf. +.	....	....	.. .	Minces flocons, blanc neigeux en haut, blanc jaunes en bas; milieu clair.
londinensis ..	Nil.	....	Faible develop. petites col. blanches (*gél. glycér.*).	....	....	....
luteola ..	Cult. couleur de café au lait.	Liquéf. +	....	Liquéf. +.	....	....
melanocycla ..	Col. rouges, effl. noire.	Liquéf. +.	....	....	....	Cult. incolore sur eau peptonée
melanosporea ..	Col. rouges, effl. noire.	Liquéf. +.	....	....	....	Cult. jaune orange sur eau peptonée.
microparva ..	Col. jaunes sans effl.	Liquéf. +.	....	....	....	....

OGIQUES ET CULTURAUX DES *NOCARDIA*.

Aspect et odeur.	Aérobie ou Aéro-anaérobie.	Act. diast.	Coloration.	Morphologie, dimensions.	Act. pathogène.	Inoculations.
....	Aéro-anaérobie.	....	....	Ressemble aux b. diphtériques.	+ (homme).	Lapin, cobaye rat.
Caractères de de *N. bovis*.	....	....	Gram —.			
....	....	....	....	....	....	Lapin, cobaye.
Col. rouges, couleur de Ziehl-Nehlsen.	....	....	....	....	+ (homme).	Lapin, cobaye, rat.
....	Aer. str.	....	....	....	+ (homme)	Cobaye.
....	Aer. str.	....	....	....	+ (homme).	
....	Aer. str.	....	....	Elem. clavif.	? (homme)	
.. .	Aéro-anaérobie					
....	....	+				
....	....	+				
....	....	+				

RÉSUMÉ DES CARACTÈRES BIOL-

Nocardia.	Pomme de terre.	Gélatine (cult. et liquéf.).	Gélose.	Sérum coagulé	Lait.	Bouillon.
minutissima ..	Cult. rouge vineuse.	Enduit brunâtre.	Cult. rouge brunâtre.	....	....	....
monospora ..	....	....	....	....	....	....
musculorum suis						
muris ..	Nil.	....	Nil.	Col. incolores, grises ou roses develop. inconstant.	Nil.	Nil.
odorifera ..	Col. incolores.	....	....	....	....	....
orangica ..	....	Liquéf. +. Pigm. —.	Col. jaune orange, nuance rouges (*gél. malt.*).	....	....	....
parva ..	Col. jaune brunâtres, effl. blanche.	Liquéf. +.	....	....	....	....
pelletieri ..	....	....	Cult. lente rouge corail (idem sur *Sab. gluc.*).	....	....	....
pluricolor ..	....	Cult. rouge brillante.				
ponceti ..	....	Nil.	Nil.	Cult. abond au bout de 24 h.	....	Trouble uniforme, minces pellicules au fond.
pseudotuberculosis.						

OGIQUES ET CULTURAUX DES *NOCARDIA*.

Aspect et odeur.	Aérobie ou Aéro-anaérobie.	Act. diast.	Coloration.	Morphologie, dimensions.	Act. pathogène.	Inoculations.
Cult. difficiles. Spores simples et non enchaînés. Ne se developpe pas au dessous de 35°.	Aéro-anaérobie.	....	....	Mycelium 0, 6 à 1, 3 micron ramifié.	+ (homme).	
Col. circulaires, incolores, grisâtres ou roses. Lent develop. Les meilleurs milieux sont ceux qui contiennent du sang ou du liquide d'ascite.	Aéro-anaérobie.	+	Gram −. Ziehl −.	..	+ (rat). ? (homme).	
Odeur de moisi.	Aéro-anaérobie.					
....	....	−				
....	....	+				
....	....	....	Gram +.	Articles cocciformes dans les tissus.	+ (homme).	
....	....	....	....	....	+ (homme).	

RÉSUMÉ DES CARACTÈRES BIOL-

Nocardia.	Pomme de terre.	Gélatine (cult. et liquéf.).	Gélose.	Sérum coagulé.	Lait.	Bouillon.
pulmonalis ..	....	....	Faible develop. ; sur *gél. malt.* col. blanches, rondes, inodores.	....	....	Flocons blancs au fond (*b. maltosé*).
putridogenes ..	....	....	....	....	....	....
rivierei ..	....	....	....	....	....	....
rosea ..	Cult. jaune.	Liquéf. +. Pigm. —.	Cult. rose sur *gél. malt.*	....	....	....
rosembachi ..	....	Col. jeunes blanches, col. vieilles gris-brunâtres. Liquéf. negat.	Cult. brunâtre.	....	....	....
rubra ..	Col. rouges.	Liquéf. + (rapide).	Cult. rouge cinabre.	....	Rouge foncé.	Col. rouges tombant au fond.
saprophytica ..	....	....	....	....	....	....
silberschmidti ..	....	Cult. facile	....	....	....	....
somaliensis ..	Cult. blanche, lichénoide devenant jaune au 6^{me} jour. Pigm. —.	....	....	....	....	Nil sur *b. végétal.*
tenuis ..	Nil.	Nil.	Nil.	....	....	....
thermophyla ..	Tâches jaune pâles devenant blanc grisâtres, excavées, plissées.	Col. jaune pâles Liquéf. + (lente).	Cult. membraneuse, grisâtre, plissée sur *gél. gluc.* ou *lactosée.*	....	Pellicule jaune orange ; coag. (5^{me} jour), r. acide.	Flocons jaune pâles, milieu clair au fond.
thibiergei ..	....	....	Petites col. blanches sur *gél. malt.*	....	....	Cult. au fond.

OGIQUES ET CULTURAUX DES *NOCARDIA*.

Aspect et odeur.	Aérobie ou Aéro-anaérobie.	Act. diast.	Coloration.	Morphologie, dimensions.	Act. pathogène.	Inoculations.
....	Aer. str.	....	Gram +. Ziehl −.	0, 5 micron de larg., élém. ramifiés.	+ (homme).	Lapin, cobaye.
....	....	....	....	....	....	Lapin.
Cult. faciles.	Aer. str.	....	....	....	+ (homme).	
....	....	+				
....	Aéro-anaérobie.					
....	Aéro-anaérobie.					
Ne se develop. pas à 37°.						
....	Anaérobie.	....	....	Formes bacillaires.	+ (homme).	
....	....	....	....	....	+ (homme).	
Seul milieu de cult. *gél-ascite.*	....	....	Gram + (± et − dans les cult. jeunes).			
Odeur d'éther (lait) remplacé plus tard par une odeur de terreau, lors de la formation d'arthrospores.	....	....	Gram +. Ziehl −.	0, 8 à 1 micron de larg.		
....	....	....	....	0, 2 micron de large.		

RÉSUMÉ DES CARACTÈRES BIOL-

Nocardia.	Pomme de terre.	Gélatine (cult. et liquéf.).	Gélose.	Sérum coagulé.	Lait.	Bouillon.
thiryei ..	Cult. rose grisâtre, verruqueuse, vermoulue.	Pellicule jaune grisâtre, cristaux améthyste clair. Liquéf. + (rapide).	Col. circ, saillantes, grisâtres ou violaces, effl. blanche entourée d'auréole mordorée. La cult peut être jaune brunâtre ou blanche.	Liquéf. + (rapide).	Peptonisation rapide.	....
valvulae ..	....	....	....	....	....	....
verrucosa ..						
violacea .	Membrane plissée, violette ou gris ardoise; Pigm. brunâtre ou violace.	....	Col. gris. violaces, effl. blanche. Pigm. brune.	....	Cult. rose avec petits points violets. Peptonisation lente, r. alc., liquide rouge vineux.	....

OGIQUES ET CULTURAUX DES *NOCARDIA*.

Aspect et odeur	Aérobie ou Aéro-anaérobie.	Act. diast.	Coloration.	Morphologie, dimensions.	Act. pathogène.	Inoculations.
Odeur de moisi (sérum).	Aérobie.					
....	Aérobie.					
Efflorescence rapide.	....	....	....	....	....	Cobaye.

Nocardia.	Pomme de terre.	Carotte.	Gélose.	Gél. glyc.	Gél. malt.	Gél. gluc.	Sab. malt.	Bouillon.	Bouil. malt.	Bouil. g
chalmersi	Pellicule sèche, membraneuse, plissée, blanc sale, s'étendant aux parois du tube. Aspect reticulé, pigmentation brunâtre.	Pellic. comme sur p. de terre, les plis étant plus minces et s'éffaçant avec l'âge; couleur blanc jaune devenant jaune brunâtre; membrane translucide sur les parois.	Cult. sèche, granuleuse, transparente au début, blanchâtre plus tard.	Mince couche sèche, transparente, légèrement brillante.	Id. comme sur gélose simple.	....	Cult. mince blanche; effl. blanche.	Pellicule blanche, plissée, adhérente; dépôt blanc; milieu clair.	Mince pellic. blanche, plissée consistente, adhérente, les plis ressemblant aux anses intestinales; dépôt, milieu clair; effl. blanche.	Idem c me sur malt.; cule m onnée.
christopher-soni	Cult. saillante, jaune crème devenant plus tard blanchâtre et sèche; col. de dimensions variables, quelques unes en tête d'épingle. Aspect cireux. Pas de pigmentation.	Id. comme sur p. de terre, mais les col. humides, granuleuses. Apparence de beurre.	Cult. transparente, granuleuse, humide, sans effl.; faible develop.	Nil.	Cult. humide, crémeuse, cireuse.	Cult. blanche, faibe develop.	Cult. abondante, un peu humide composées de col. jaune claires de dimensions variables.	Pellicule blanche, non adhérente; dépôt blanc; léger trouble.	Forte pellicule blanche, non adhérente; léger trouble.	Pellic. jaune, tente, hérente bondan pôt au
goensis	Cult. blanche, sèche, visqueuse, cérébriforme devenant gris claire. Pigm. jaune devenant bruuâtre. Effl. blanche.	....	Nil.	Cult. blanc sâle, sèche, resemblant à une col. bactérienne; légère effl. blanche.	Cult. abondante, granuleuse, blanc laiteuse, humide, brillante; blanc jaune lorsque confluente.	Cult. blanche, opaque, sèche, blanc laiteuse lorsqu'épaisse, bords échancrés.	Col humides, blanc sâle.	Mince pellic. blanche s'étendant aux parois du tube; trouble; dépôt; effl. blanche.	Flocons au fond et en suspension; pellicule, plissée, consistente, semblant trouée.	Trouble pôt s neux; comme bouil. mais pl veloppé
panginensis	Cult. rouge cinabre au centre et blanche à la périphèrie, devenant jaune brunâtre et verdâtre. Pigm. brun sale.	....	Cult. blanche, opalescente, sèche granuleuse, les bords irréguliérement dentelés; effi. blanche.	Col. circulaires, blanc jaunes, ressemblant à des col. de coques.	Cult. blanc sale humide, homogène, jaunâtre lorsqu'épaisse, bords dentetés.	Idem comme sur gél. malt., mais plus developpéé, et les bords plus dentelés. Couleur jaune topaze à la partie inf.	Cult. blanche humide, brillante. Aspect de cristaux d'acide borique.	Pellicule blanche adhérente, plissée; trouble; dépôt au fond et sur les parois; effl. blanche.	....	...
pinoyi	Pellicule sèche, marron clair, formée de petites col. saillantes circulaires. Après quelques jours la cult. est saupoudrée de petites col. chocolat. Pigm. brun foncé.	Nil.	Cult. humide, brillante, blanchâtre, bords irréguliers, dentelés, enduit visqueux Col. isolées en tête d'épingle.	Id. comme sur gélose simple.	Id. comme sur gélose simple.	Id. comme sur gélose simple.	Abondant enduit blanc sâle ou blanc jaune; col. isolées en tête d'épingle.	Trouble; dépôt au fond du tube.	Id. comme sur bouillon simple.	Idem c sur bo simple.

VA GÔA PAR LES AUTEURS

. végé-al.	Lait.	Lait tournesolé.	Eau peptonée.	Eau pept. glyc.	Milieu de Rivière.	Act diast.	Aéro. anaér.	Dimensions.	Coloration.	*Nocardia.*
pellic. grisâ- dépôt nneux.	Coagulation ; peptonisation ; bouchon blanc jaunâtre à la surface.	A ± Alc. Couleur d'abord rouge vineuse, plus tard jaune claire ; légère coagulation au début.	Trouble et mince dépôt ; mince pellic. tardive, blanchâtre ; légère effl. blanche ; pigm. brunâtre à la partie sup.	Mince dépôt ressemblant à du coton ; milieu clair.	Faible develop ; col. blanches.	—	Aér-anaér.	3 à 5 micron sur 0, 5 à 0, 7 micron.	Gram +. Ziehl +.	*chalmersi.*
ule, dé- risâtre.	Coagulation : légère peptonisation.	Acide ; coagul. ; peptonis. ; milieu rose.	Pellic. blanc sale, membraneuse, feutré, non adhérente ; dépôt ; trouble.	Trouble ; dépôt soyeux flottant par agitation.	Cult. crémeuse, humide, granuleuse ; faible develop.	+	Aér-anaér.	30 à 70 micron sur 0, 6 à 0, 7 micron.	Gram +. Ziehl —.	*christopherson.*
pellic. he monsur les s ; abondépôt onneux ; brune.	Coagulation ; peptonisation ; bouchon de caséine vers la partie supérieure.	Acid. ; peptonis.	Mince dépôt tardif ; milieu clair.	Mince pellicule composée d'écailles ; milieu clair.	....	+	Aer. str.	5 à 40 micron sur 0, 8 à 1, 2 micron.	Gram +. Ziehl —.	*goensis.*
blan- plissée, dérente ; ole, dé- sablon- ; pigm. e, très e.	Coagulation ; peptonisation ; mince couche de sérum à la surface.	A. Alc. Couleur rouge vineuse et jaune paille ; peptonisation.	Mince dépôt ressemblant à du coton.	Pellic. tardive, dépôt, trouble, pigm. jaune sale en haut, rouge brique en bas.	....	+	Aer. str.	40 à 60 micron sur 0, 8 à 1 micron.	Gram +. Ziehl —.	*panginensis.*
pellic. st., plis- montant s parois. g. couleur fusion e grillé.	Coagulation (72*h*) ; peptonisation (96*h*) ; Odeur de cuir neuf.	Couleur d'abord jaune paille sèche devenant plus tard rose.	Pellicule blanche.	Dépôt ressemblant au coton, milieu clair.	....	+	Aer. str.	Longueur variable sur 1 à 2 micron de larg.	Gram +. Ziehl —.	*pinoyi.*

TABLEAUX SYNOPTIQUES ORGANISÉS EN VUE DE FACILITER L'IDENTIFICATION DES *NOCARDIA*.

1re série.—Cultures sur pomme de terre positives.

I Groupe. Cultures polychromogènes.

A. Colonies indifféremment bicolores.

B. Pas de pigmentation de pomme de terre.

P. de terre col. grisâtres ou jaunes. *Gélatine* col. blanches, liquéf. +. *Act. diast.* +. Pathogène, produit la pseudo-tuberculose .. .. **alba.**

B'. Pigmentation de pomme de terre.

C. *P. de terre* col. grises ou gris jaunâtres, pellic-plissée, effl. blanche. *Gélatine* col. blanches, auréole brunâtre, liquéf. +. *Gélose glycér.* pellic. adhér. luisante, grisâtre; effl. blanche tardive; pigm. brunâtre. *Bouillon* flocons, milieu clair .. .. **dichotoma.**

C'. *P. de terre* col. violaces ou gris ardoise; pigm. brun-violace. *Gélose* col. gris violaces; effl. blanche, pigm. brune. *Lait* cult. rose avec petits points violaces; pept. lente, milieu rouge-vineux. *Gram* +. Pathogène pour le cobaye .. .. .. **violacea.**

A'. Nuances polychromogènes survenant avec l'âge de la culture.

B. Colonies au début blanches.

C Pathogènes.

D. Aéro-anaérobie.

E. *P. de terre* cult. verruq. devenant rouge brique, effl. blanche. *Gélat.* cult. jaune, liquéf. −. *Gélose* cult. blanche, verruq. devenant ochrace, pellic. plissée, rouge. *Bouillon* milieu clair, écailles au fond. *Lait* a. alc. coag. Pathogène pour l'hom. et anim. .. .. **asteroides.**

E'. *P. de terre* col. devenant rose brunâtres, sèches, cratériformes. *Gélat.* col. brunes, plus claires à la périph, liquéf. −. *Gélos.* cult. sèche, verruq., blanc jaune, effl. blanche. *Bouillon* col. blanches, sèches, mince dépôt, milieu clair. *Ziehl* +. Pathogène pour les animaux **canis.**

D'. Aérobie str.

P. de terre culture jaune au 6me jour, pigm. négat. *Bouillon* végétal nil. Pathogène pour l'homme **somaliensis.**

C'. Saprophytes.

D. *P. de terre* col. se plissant à la longue, se disposant en ondulations concentriques bleues, vertes ou violaces, pigm. bleuâtre. *Gél. sérum sucrée* cult. plâtrée, pigm. brunâtre. *Lait* coag. lente .. **coelicolor.**

D'. *P. de terre* cult. devenant grisâtre, visqueuse, cérébriforme, plissée ; pigm. d'abord jaune, plus tard brunâtre. *Gélose* nil. *Gél. malt.* cult. abond., humide, brillante, blanc laiteuse, devenant jaunâtre lorsque confluente. *Gél glycér.* cult. blanc sale, séche, effl. blanche. *Sab. malt.* col. blanc sale, humides. *Bouillon* trouble, dépôt, pellic., effl. blanche. *Act. diast.* +. *Mycélium* 0·8 à 1·2 de larg. Aèrobie str. .. **goensis.**

B'. Colonies au début roses.

P. de terre col. devenant jaune orange, pigm. brunâtre. *Gélat.* pas de liquéf. *Sab. gluc.* col. rose violaces. *Lait* pellic. jaune orange, coag. négat. *Sérum* col. blanches. Pathogène pour l'homme .. .. .. **braziliensis.**

B''. Colonies au début jaunes.

C. *P. de terre* col. d'abord pâles, plus tard blanc grisâtres, pellic. plissée. *Gélat.* col. jaune pâles, liquéf. vers le 6me jour. *Bouillon* flocons jaune pâles au fond, milieu clair. *Gél. sucrée* membrane grisâtre, platrée dans quelque endroits. *Lait* pellic. jaune claire, coag. au 5me jour, odeur d'éther. *Sérum* cult. membraneuse, plissée, liquéf. +. *Gram* +. *Ziehl* –. *Mycelium* 0·8 á 1 de larg .. .. .. **thermophyla.**

C'. *P. de terre* cult. crémeuse, devenant plus tard blanchâtre et sèche. *Carotte* idem, col. humides, brillantes, aspect de beurre. *Gélose* cult. transparente, humide, sans effl. *Gélos. glyc.* nil. *Sab. malt.* cult. jaune claire. *Sab. gluc.* cult. blanc laiteuse. *Bouillon* trouble, dépôt, pellicule. *Mycélium* 0.5 á 0·7 de larg. *Act. diast.* +. Aér-anaér . .. .. **christophersoni.**

B''. Colonies au début rouge cinabre au centre.

P. de terre cult. d'abord blanche à la périph., cérébriforme, prenant successivement des nuances jaune claire, jaune brunâtres et verdâtres ; pigm. brun sale. *Gélose* cult. blanche opalescente. *Gél. glycér.* col. blanc jaunes. *Sab. malt.* cult. blanc laiteuse. *Sab. gluc.* cult. blanc laiteuse ; aspect de cristaux d'acide borique. *Mycélium* 0·8 à 1 de larg. *Act. diast.* +. Aérobe str. .. .. **panginensis.**

A''. Colonies aux nuances bicolores.

P. de terre col. rose grisâtres ; pigm. brunâtre ; milieu vermoulu. *Gélose* col. grisâtres ou violaces, effl. blanche, entourée d'une auréole mordorée, brillante, dûe à des cristaux lamellaires, violet amethyste au centre rouge rubi. *Gélatine* cristaux moins colorés, pellic. jaune grisâtre, liquéf. rapide. *Sérum* liquéf. rapide, odeur de moisi. *Lait* peptonisation .. **thiryei.**

II Groupe. Cultures jaunes.

A. Liquéfaction de gélatine négative [Pigmentation de pomme de terre négative].

B. *P. de terre* col. plates sans filaments sporifères. *Gélatine* col. plates, isolées, cireuses, effl. blanche. *Gélose* col. circu-

laires, jaunes, confluant en pellic verruq. et jaune orange. Aér. str. .. .. **aurantiaca.**

B′. *P. de terre* col. couleur de peau ; faible develop. *Gélatine* couleur idem, effl. blanche. *Lait* nil. *Act. diast.* —. *Gram* +. *Ziehl* —. Aéro-anaérobie. Pathogène pour l'homme. Inoc. négatives .. .. .. **convoluta.**

A′. Liquéfaction de gélatine positive.

B. Pigmentation de gélatine positive.

C. *P. de terre* col. en grain de moutarde ; effl. blanche, jaune orange ou jaune rose ; pigm. noirâtre. *Gélatine* lent develop. ; col. blanc jaunes ; liquéf. au 7^{me} jour. *Gélos. glycér.* col. dures, blanches, sphériques, cratériformes ; effl. jaune ou grisâtre. *Sérum* petites col. rondes sans liquéf., ni pigm. *Bouillon* flocons blancs, liquide clair ou légèrement roux. *Gram* +. *Ziehl.* —. *Act. diast.* —. Aéro-anaérobie. Pathogène pour l'homme et pour les animaux .. .. **bovis.**

C′. Les mêmes caractères que *N. bovis*, dont elle diffère pour être *Gram* — .. .. **lanfranchii.**

C″. *P. de terre* abond. develop., cult. jaune paille clair. *Act diast.* — .. .. **beta.**

B′. Pigmentation de gélatine inconnue.

C. Aérobie str.

D. *P. de terre* cult. lente, pelites col. confluant en pellic. *Gélatine* col. jaunes au centre opaque. *Gélose* cult. abond., verruq. à la périph., centre jaune, effl. blanche. Non pathogène pour l'homme .. .. **albida.**

D′. *P. de terre* pigm. négat. *Bouillon* minces flocons blanc neigeux en haut, blanc, jaunâtres vers la face infér., milieu clair .. .. .. **liquefaciens.**

C′. Cult. anaérobies inconnues.

D. Act. diast. positive.

G. *Gélose malt.* col. jaunes. Pas de pigm. des milieux .. .. .. **citrea.**

G′. *P. de terre* pas d' effl. .. .. **microparva.**

G″. *P. de terre* col. jaunes aux nuances brunes, effl. blanche .. .. .. **parva.**

D′. Act. diast. inconnue.

Bouillon flocons blancs au fond. *Gélose* nil. *Gél. malt.* petites col. blanches. *Carotte* au début petits points blancs, plus tard col. rondes protubérantes. Pathogène pour l'homme et cobaye **lingualis.**

C″. Aéro-anaérobie [*Sérum* liquéf. +] .. .. **appendicis.**

B″. Pigmentation de gélatine négative [*Gélose malt.* cult. rose. *Act. diast.* +] .. .. **rosea.**

A″. Liquéfaction de gélatine inconnue.

P. de terre cult. nodulaire dès le 2^{me} jour ; effl. neigeuse. *Gélose* col. jaunes entourées d'une couche blanche. Pathogène pour l'homme et pour les animaux. *Mycélium* 0·5 à 0·75 de larg. **lasserrei.**

III Groupe. Cultures rouges.

A. Act. diast positive.

B. Effl. blanche sur pomme de terre [*Gélatine* liquéf. −] .. **albosporea.**

B′. Effl. noire sur pomme de terre.

C. *Gélat.* liquéf. +. *Eau peptonée simple et glucos.* pigm. jaune orange .. .. **melanosporea.**

C′. *Gélat.* liquéf. +. *Eau peptonée simple et glucos.* cult. incolore .. .. **melanocycla.**

A′. Act. diast. inconnue.

B. Cultures anaérobies inconnues.

P. de terre cult. verruq., couleur de chair ou rouge orange. *Gélat.* col. radiées, effl. blanc rose ; liquéf. −. *Gélose* même nuance que sur p. de terre. *Bouillon* écailles à surface, flocons au fond. *Lait* nil. Pathogène. Gram + **carnea.**

B′. Aéro-anaérobie.

C. *P. de terre* cult. rouge vineuse. *Gélat* enduit brunâtre. *Gélose* cult. rouge brunâtre. *Mycélium* bacillaire, 0·6 à 1·3 de larg. Pathogène pour l'homme. Cult. difficiles .. .. **minutissima.**

C′. *Gélat.* liquéf. +. *Gélose* cult. rouge cinabre. *Bouillon* col. rouges à surface, tombant au fond. *Lait* col. plus colorées que sur bouillon. Saprophyte .. **rubra.**

A″. Act. diast. inconnue [*Gélat.* liquéf. +] .. .. .. **chalcea.**

IV Groupe. Cultures brunes.

A. Aéro-anaérobie .. .. **enteritidis.**

A′. *P. de terre* cult. couleur de café au lait. *Gélat* et *sérum* liquéf. +. Aéro-anaérobie .. .. **luteola.**

A″. *P. de terre* petites col. saillantes, circulaires, marron clair ; la culture est plus tard parsemée de petits points couleur de chocolat ; pigm. brun foncée. *Carotte* nil. *Gélose* cult. humide, brillante, blanche ; bords irreguliers et saillants. *Bouillon* trouble et depôt. *Bouillon végétal* pellic. consistente, plissée ; pigm. couleur d'infusion d'orge grillé. *Lait* coag. et pepton. Aér str. *Act. diast.* +. *Mycélium* 1 à 2 de larg .. .. **pinoyi.**

V Groupe. Cultures grisâtres.

P. de terre col. circulaires, confluant en pellicule verruq. ou plissée ; effl. blanche .. .. **farcinica.**

VI Groupe. Cultures incolores.

Odeur des cultures moisi. *Pigm.* brunâtre. Aéro-anaérobie .. **odorifera.**

VII Groupe. Cultures blanches.

A. Pigmente la pomme de terre.

B. *P. de terre* pigm. verte. *Gélat.* points blancs, verdâtres ; liquéf +. *Bouillon, lait, eau peptonée* nil. *Gélose glycér. et gluc.* col. blanc grisâtres, profonds sillons à surface. *Sérum* cult. blanche se plissant après 48 heures. Aér str. Pathogène aux animaux .. .. .. **garteni.**

B′. *P. de terre* pigm. noire, odeur de terreau. *Gélatine* et *gélose*, col. blanches, veloutées ; liquéf. et pigm. +. *Gélose par*

piqûre cult. blanc sale, pellic. blanche à la surface, la face infér. étant jaune et adhérente. *Lait bouchon* jaune, adhérent, coag., caséine au fond .. .. **invulnerabilis.**

B''. *P. de terre* cult. blanc sâle, sèche, membraneuse, plissée, pigm. brun claire, devenant foncée. *Carotte* pellic. translucide, blanc jaunâtre, s'étendant aux parois et devenant jaune brunâtre. *Gélose* cult. sèche, granuleuse, transparente au début, blanche plus tard. *Gélose glycér.* faible develop. mince couche sèche, transparente. *Bouillon* pellic. blanche, plissée, adhér., dépôt, milieu clair. *Bouillon végétal* mince pellic blanc grisâtre, dépôt sablonneux au fond. *Lait* coag. et pept., bouchon blanc jaune à la surface. *Lait tourn.* a. alc., milieu jaune paille. Aéro-anaérobie. *Gram* +. *Act. diast.* —. *Mycélium* 0·5 à 0·7 de larg .. .. **chalmersi.**

A'. Ne pigmente pas la pomme de terre.

B. *Gélat.* et *sérum* liquéf. +. Aéro-anaérobie .. .. **graminarium.**

B'. *Gélat.* sphères blanches entourées de poils radiés. *Bouillon* col. tombant au fond, odeur de moisi. *Gélose* col. confluant en pellic. mamillonnée, plissée, grisâtre ; effl. blanche. Sapprophyte. Aér.-anaér. *Mycélium* 0·5 à 0·6 de larg, avec filaments spirillaires .. .. .. **foersteri.**

VIII Groupe. Couleur des cultures inconnues.

A. Abondant development sur pomme de terre.

B. *P. de terre* cult. velontée, brillante. *Sérum* et *gélatine* liquéf. +. Aéro-anaérobie .. .. .. **candida.**

B'. *P. de terre* col. irregulières, sphériques, plus on moins colorées suivant l'acidité du milieu ; effl. blanche ; pigm. —. *Gélatine* cult. blanche, pen abondante, liquéf. —. *Gélose glycér.* col. consistentes, adhérentes, dixoïdes, se plissant à la longue, blanches au centre et rouges à la périphérie. *Bouillon* flocons sphériques, tombant au fond, milieu clair. *Bouillon végétal* idem ou flocons plats se fixant au tube, léger trouble, pigm. brunâtre, r. alc. ; effl. blanche. *Lait* pas de coag., pept. lente. *Sérum* col. blanches ou roses claires, pept. *Mycélium* 1 à 1·5 de larg. *Gram* +. *Ziehl* —. Aéro-anaérobie. Pathogène pour l'homme. Inoc. négat. .. .. **indica.**

A'. Faible developpement [Gélose faible develop. *Gram* +. Aéro-anaérobie] .. .. **bruni.**

2me série. — Cultures sur pomme de terre négatives.

I Groupe. Cultures sur gélatine inconnues.

A. *Gél. glyc.* petites col. blanches. Aér. str. .. .. **foulertoni.**

A'. *Gél. glyc.* petites col. blanches, faible develop. Aér. str. *Mycélium* sans formations claviformes .. .. .. **londinensis.**

A''. *Gél.* nil. *Sérum* cult. incolore, rose ou grise, develop. inconstant. *Gélose-sang* ou *gélose-ascite* bon develop. Aéro-anaérobie. *Act. diast.* +. *Gram* +. *Ziehl* — .. .. .. **muris.**

II Groupe. Cultures sur gelatine négatives.

A. Aéro-anaérobie.

B. *Sérum* nil .. .. **equi.**

B′. *Bouillon* cult. rapide, pellic. à surface. *Gélose* bon develop. *Gél. glycér.* col. jaunes. *Mycélium* avec formations claviformes et formes bacillaires ressemblant à des b. diphthériques .. .. **krausei.**

A′. Anaérobie str. .. .. **neschezadinenchi.**

A″. Cult. anaérobies inconnues.

B. *Sérum* bon develop .. .. **berestneffi.**

B′. *Gélose ascite* cult. lente, translucide, faible develop., centre légèrement opaque. *Gram.* – (cult. jeunes) + (cult. agées). Idem sur les cheveux malades. *Ziehl* – .. .. **tenuis.**

III Groupe. Cultures sur gélatine positives.

A. *Gélatine* liquéf. –. *Bouillon* faible develop., trouble uniforme. Pathogène pour le lapin et rat. *Sérum* petites col. blanc grisâtres, finement rayonnées. Gram +. Anaérobie .. **cuniculi.**

A′. *Gélatine* liquéf. +. Act. diast. – .. .. .. **erythraea.**

3me série.—Cultures sur pomme de terre inconnues.

I Groupe. Caractères culturaux connus.

A. Cultures sur gélatine négatives.

B. *Gélose* col. em goutte de rosée, devenant plus tard jaunes. *Gélose sérum* col. rouges. *Bouillon* écailles au fond du tube. Aéro-anaérobie. Cult. difficiles sauf sur gél. sérum. Pathogène .. .. **israeli.**

B′. *Gél.* nil. *Bouillon* trouble uniforme, minces pellicules au fond *Bouillon végétal* (*avoine*) cult. abondant au bout de 24 heures .. .. **ponceti.**

A′. Cultures sur gélatine positives.

B. Liquéfaction +

C. *Gélat.* pigm. –. *Gél. malt.* cult. jaune grisâtre. *Act. diast.* – .. .. **cinereonigra.**

C′. *Gélat.* pigm. –. *Gél. malt.* cult. jaune orangé aux nuances vertes. *Act. diast.* – .. .. **orangica.**

B′. Liquéfaction –.

C. Aérobie str. [*Gélat.* petites col. blanches et rondes. *Gram* +. *Act. diast.* –] .. .. .. **dassonvilliei.**

C′. Cult. anaérobies inconnues [*Gélat.* cult. rouge brillante] **pluricolor.**

C″. Anaérobie [Formes bacillaires dans les cult.] .. **silberschmidti.**

C‴. Aéro-anaérobie.

D. Cult. faciles.

E. *Gélat.* cult. blanche. *Gélose* cult. blanche, forte odeur .. .. .. **gedanensis.**

E′. *Gélat.* cult. blanche devenant gris brunâtre. *Gélose* cult. brunâtre. *Mycélium* formations claviformes .. .. .. **rosenbachi.**

D′. Cult. difficiles.

E. *Sérum* liquéf. –. *Act. diast.* –. *Mycélium*

mince rarement ramifié, formations claviformes .. .. **hoffmani.**

E′. Sur *gélatine* .. .. .. **hominis.**

A″. Cultures sur gélatine inconnues.

B. Aérobie str.

C. Act. pathogène inconnue .. .. .. **valvulae.**

C′ Pathogène pour les animaux.

D. Cult. rougeâtres [*Ziehl* + col. rouges ressemblant à la sol. de Ziehl Nehlsen. Pathogène pour le lapin, cobaye et rat] .. .. .. **leishmani.**

D′. Cult. pas rouges.

E. *Bouillon malt.* bon develop. Mycélium 0·7 à 0·8 de larg. Pathogène pour le cobaye **buccalis.**

E′. *Bouillon* malt. flocons blancs au fond du tube. *Gélose* faible develop. *Gél. malt.* col. rondes, blanches, sans odeur. *Gram.* +. *Ziehl* −. *Mycélium* 0·5, ramifié, formations claviformes, facilement dissociable. Pathogène pour le lapin et cobaye .. .. **pulmonalis.**

B′. Aérobe-anaérobie.

C. *Bouillon* develop. au fond. *Gél. malt.* petites col. blanches. *Mycélium* form claivformes .. .. **thiburgei.**

C′. ——— .. .. **americana.**

B″. Cultures anaérobies inconnues.

C. Cultures blanches [Cult. lentes sur tous les milieux. Col. laiteuses, proéminentes avec un bouton central, souvent des sillons cruciformes. *Mycélium* se dissocie en articles ronds de 1 à 1·5 .. .. .. **decussata.**

C′. Cultures pas blanches.

D. Cult. jaune brunâtres .. .. .. **fusca.**

D′. Cult. vertes, chaînes d'arthrospores. Ne se develop. au dessous de 35° .. .. .. **glauca.**

D″. *Sab. gluc.* cult. lente, rouge corail, petites col. cérebriformes. *Gram* +. *Mycélium* mince se dissociant en articles cocciformes. Pathogène pour l'homme .. .. .. **pelletieri.**

C″. Couleur des cultures inconnues.

D. Pathogène pour les animaux donnant des accidents putrides .. .. **putridogenes.**

D′. Aéro-anaérobie. *Gram* +. Pathogène pour l'homme .. .. **carougeaui.**

D″. Spores simples et non en chaînes. Ne se develop. au dessous de 35° .. .. .. **monospora.**

D‴. Ne se develop. pas à 37° .. .. **saprophytica.**

II Groupe. Aucun caractère biologique connu .. **aquatilis, bicolor, bonvicini, chondri, gelatinosa, holmesi, lacertae, lehman, liguire, musculorum suis, pseudotuberculosis, verrucosa.**

[*Nous n'avons pu obtenir aucune information sur ces espèces.*]

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THE ORIGINS AND ETHNOLOGICAL SIGNIFICANCE OF INDIAN BOAT DESIGNS.

BY

JAMES HORNELL, *Director of Fisheries, Madras Government.*

Smithsonian Institution
DEC 8 1920
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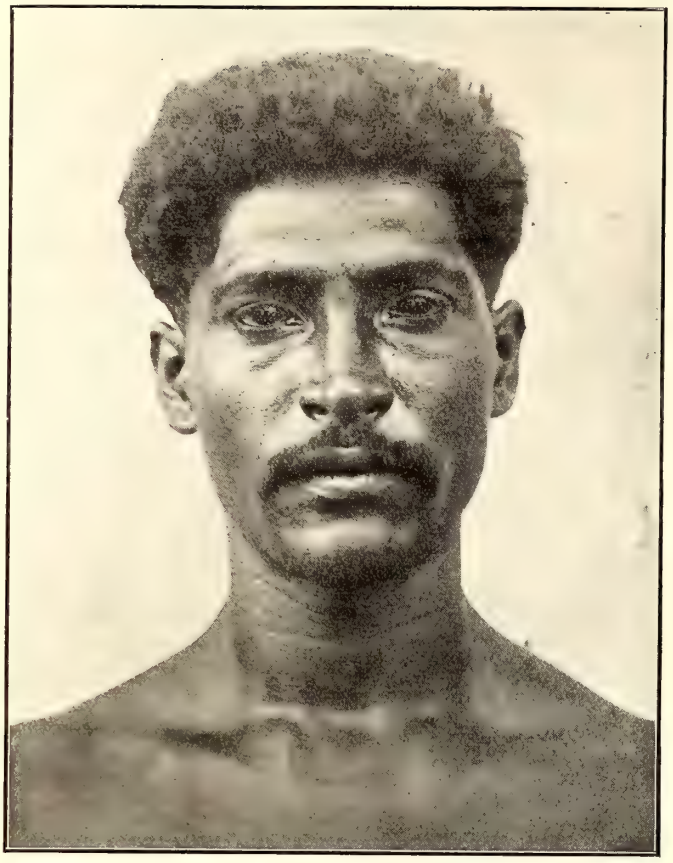

Fig. 1. A Parawa Fisherman of Tuticorin showing Polynesian type of features.

Fig. 2. Stern view of two Ganges cargo-boats, clinker-built ; rudder of balanced type. Benares.

From photographs by J. Hornell.

DEC 8 1920
National Museum

The Origins and Ethnological Significance of Indian Boat Designs.[1]

By JAMES HORNELL, *Director of Fisheries, Madras Government.*

[With Plates I—VI.]

PART I.—BOAT TYPES NOW EXISTING IN INDIA.

During recent years several ethnologists have endeavoured to adduce evidence of the spread and penetration of ancient Mediterranean culture by sea along definite trade routes from the Red Sea to India, thence eastwards to the myriad islands of the Malay Archipelago and the Pacific and onwards to the American continent itself. A great diversity of customs and many domestic articles of utility or ornament have been examined to see how far they bear out this hypothesis. The enquiry from which originated the following essay, was commenced with a view to see what light an examination of the main types of sea and river craft found in India at the present day would shed upon this theory of a cultural world drift from west to east. The investigation had not proceeded far when it became apparent that a greater and far more important problem was involved and that a careful study of what had appeared at the beginning as disconnected and unimportant facts was capable of throwing much needed illumination upon a hitherto unknown phase of the race problems of India.

One of the earliest facts we ascertain when investigating the designs of Indian coast craft is the correlation of particular designs with definite regions on the coast line characterised by some clearly marked physical features and usually also by racial divergence. The amount of overlapping is comparatively insignificant and from all we can see the prevalent designs of fishing craft are the same now in each region as they were hundreds of years ago. Only in the larger coasting craft do we find evidence of considerable recent change in design.

The coast and island regions distinguished by characteristic boat types are as follows:—

(*a*) The North-West Coast, comprising Baluchistan, Sind, Kutch and Kathiawar,
(*b*) The Bombay Coast southward to Mangalore,
(*c*) Malabar and Travancore,
(*d*) The Gulf of Mannar,
(*e*) Palk Bay and Strait,
(*f*) The East Coast northwards of Point Calimere,
(*g*) The Maldive and Laccadive Islands.
(*h*) The Andaman and Nicobar Islands.

[1] Read in abstract at the Lahore Meeting of the Indian Science Congress, January 1918.

Each of these regions has its own boat types, its own characteristics in weather, climate and coast formation. In frequent cases characteristic boat types are co-extensive in range with the limits of race and language or the influence of foreign sea-trade. The North-West Coast is arid and stony, with physical and climatic conditions closely approximating to those of Arabia and, as we shall see, Arab boat designs are dominant and characteristic. In Bombay itself we get the same types mingled with others truly Indian in origin, but southward in the much indented coast, moist and well wooded, that stretches to Goa and Mangalore, we find Arab influence ousted by indigenous and Polynesian types, but reviving partially in Malabar where though the Malayali adheres to the indigenous dug-out design, the Arab type is largely built at those Mappilla centres where the strain of Arab blood is appreciable, as for example at Calicut, Beypore and Ponnani.

Turning Cape Comorin we find that Polynesian and indigenous types have held their own successfully against the Arab. The former influence at the present day is found best developed on the Ceylon side among the Sinhalese ; in India it is seen in strength in the north-west corner of the Gulf of Mannar and universally in Palk Bay and Strait ; elsewhere on this section of the Indian coast indigenous designs of catamaran and canoe are well-marked and unusual.

Northward of Point Calimere is the real home of the catamaran, a truly Indian type, specialized for use upon the surf-beaten Coromandel and northern Telugu coasts where the catamaran and masula boat must continue to hold their own wherever there be no harbours of refuge, such as Madras and Cocanada.

In Bengal the smaller coast craft have little importance, the types seen being really varieties of Ganges dinghis and of dug-out canoes, whilst in Burma, Mongolian and Malay influence is paramount, modified in type by local conditions and the innate unskillfulness of the Burman in boatcraft.

River craft are types apart and throughout India are all very archaic in their general features, resembling ancient Egyptian and Mesopotamian types so closely that they vivify scenes on the Nile and the Tigris in the days of Rameses and Assurbanipal.

The North-West Coast.

Sailing along the Mekran coast, past the mouths of the Indus and thence past Kutch and Kathiawar to the Gulf of Cambay, the Arab voyager finds this coast but a continuation and outlier of his own arid sandy home-land ; this has been the only land in India that the Arab has occupied even temporarily, Sind and the lower valley of the Indus having been occupied by the Arab Kasim early in the eighth century, though we have records of Arab naval raids on this coast as early as 636 A.D., only four years after the Prophet's death.

Although Arab domination in Sind and the adjacent lands was short-lived, trade with the Persian Gulf and the south of Arabia has existed from time immemorial, and it is therefore natural to find Arab influence exclusively dominant in boat and ship design everywhere along this coast. Whether in the great kotia, the Indian

sea-going sister of that handsome matron, the Red Sea and Persian Gulf baggala, or in the humbler machwa of the fisherman and in the coasters known as nauris and dhangis, several principal characteristics are seen. All hoist the Arab lateen; all lift to the long swell of their seas the great forereaching grab bow; all have a deep forefoot and a raking stern. The machwa is entirely open and undecked whereas the kotia and the baggala have a high castellated decked poop and a properly laid main deck.

The universal rig is the lateen, wider and stouter in form than the loftier and more elegant felucca-lateen of the Mediterranean. The true Arab pattern of cutting off the fore angle of the sail is followed, so that a short perpendicular edge or luff of several feet in length is given below the heel of the yard. The baggalas, kotias, nauris, dhangis, and some of the larger machwas have both main and mizzen masts; the former is a stout heavy spar stepped nearly amidships with a great rake forward to enable it to carry the weight of the heavily yarded sail in the right place. The mizzen is a much smaller spar with a less pronounced rake forwards. Of rigging there is remarkably little, usually only a forestay and a pair of stays on either side. The yard is hoisted by a stout halyard passing from the fore side through a sheave at the masthead with an enormous three-sheave wooden block stropped to the end. The purchase leads to another gigantic four-sheave block placed just in front of the poop, an arrangement identical with that used by the Egyptians in the rig of the great galleys that sailed on that wondrous voyage to Punt some 1,600 years before our era. Upon the buggala and the kotia as the aristocrats of these seas, the builders lavish much skill and care. Their high poops have the stern windows (the aft end being of that obliquely truncated form known to sailors as a raked transom stern) often highly ornamented with a considerable amount of conventional nautical carving—scrolls, rope designs and simple arabesques. The bottom, to about the water line, is sometimes coppered but generally is coated with a white pitch most characteristic of Arab ship finish, carried upwards in a wide sweep on either bow. Above this the hull and the poop superstructure are soaked and scoured with oil after every overhaul and to the eye (the nose should not be consulted) the rich red-brown colouring taken on after several applications is particularly pleasing. The bow is notably low and unobtrusive, and this taken in conjunction with the high poop is distinctly an antique combination of much significance. To see a great kotia foaming through the water with a fair wind, the sun lighting the great spread of white sail and red carved poop, is one of the prettiest sights in Eastern seas and one that instinctively heightens our respect for the race that has evolved the type, powerful and admirably fitted for deep-sea service.

At several of the larger ports of the North-West coast the building of kotias and machwas is an important industry, in spite of the fact that nearly all the timber has to be imported from the Malabar coast. Here are built the fine kotias, running from 50 to 80 feet in length and up to 150 tons in size, which trade with Cochin and Calicut to the south and as far as Zanzibar on the west. Constant and intimate traffic is carried on with the Persian Gulf and many of the vessels built in India are constructed to the order of Gulf Arabs or are sold eventually to them.

These trading craft are divided into numerous varieties by native seamen; some by differences apparently so slight that the uninitiated has difficulty in appreciating them. The main source of trouble is that boats of essentially the same build are given different names dependent primarily on the race of the owner and signalized by divergence in small detail, usually of ornament. Thus the baggala and gunjo are the Arab forms of the Indian kotia, the Arab boom or dhangi the counterpart of the Indian nauri, while the Indian batel represents the Arab sambuk.

The *baggala* is usually built by Arabs in their own lands; is two and even occasionally three-masted, fully decked, with a high poop, truncate stern with counter, rudder trunk and ornamented quarters. In size commonly between 300-400 tons, rarely reaching 500 tons' register.

The *kotia* is built in India for Indian owners; in great measure it is the native craft of the coast of Kutch and Kathiawar. In appearance it approaches closely to the baggala type, being two-masted, with poop, carved square stern and quarters; usually with a rudder trunk. In size it runs generally under 200 tons, but in spite of its smaller size it makes equally long voyages as its great relative, the baggala, often making round voyages from Katch Mandvi to Bombay, thence to Madagascar or the African coast, back to Bombay and on home.

Kotias are the oceanic tramps of Indian craft, willing to go wherever remunerative freight offers, be it Chittagong or Jeddah, Nossi Bé or Colombo. Often the better found are copper bottomed; if not, they have the usual chunam and grease mixture applied to the under-water parts. They are built chiefly at Kutch Mandvi, and on the Kathiawar coast, but a fair number are built at Mangalore and Calicut.

From baggalas of equal size they are distinguished, as are so many of these Eastern crafts, by the distinctive ornament upon the stem-head. In the baggala, this consists of a bollard-shaped prolongation of the stem-post, encircled by carved rings and often surmounted by a short peg; in kotias a striking ornament, the so-called "Parrot's head", forms a characteristic figure-head. This latter ornament is a very widely spread Indian *motif*, seen again in the gunjo and the nauri. The gunja or gunjo is an Arab-owned kotia, built for or transferred to an Arab port. The only recognisable difference is usually the form of the stem ornament; the "Parrot's head" has been reduced to a geometrical circular disc with a curved bar on the aft side in place of the beak and with a crest-like ornament on top.

Last of all the square-sterned traders commonly seen on the North-West and Bombay coasts is the Arab *sambuk*, a roughly built two-masted decked coaster, with low poop and plain stem-head. They hail from the Zanzibar and Arabian coasts, and range to 200 tons register; being seldom built in India they should properly find no place in this list, but as they constitute an essentially Arab type and are numerous in the ports of Western India it is as well to include them, as they grade into the next form:—

The *batel*, a still more primitive coaster of the baggala and sambuk type, from which it differs in being undecked except at the extreme ends and being without poop. The stern, stem-head, and general appearance are as in the sambuk. As a

rule only one mast is carried, but in the larger ones, which run to 100 tons, a small mizzen is stepped at the after-end of the kelson.

An altogether different form of Arab trader is the *boom* or *dhangi*, a cheap and older form of a small-sized baggala, from which it differs chiefly in the form of the stem terminal and in having a sharp, raked stern in place of the counter and highly ornamental broad stern. They are decked and with a poop, and are generally smartly painted along the topsides in broad fore and aft bands.

The stem-piece is plain and short, bounded by two converging horn-like bars of wood continued forwards from the gunwale.

Dhangis run to 200 tons, are rigged similarly to two-masted buggalas and are said to be exceptionally fast sailers. They are generally owned by Arabs, but are built chiefly on the Indian coast between Karachi and Calicut.

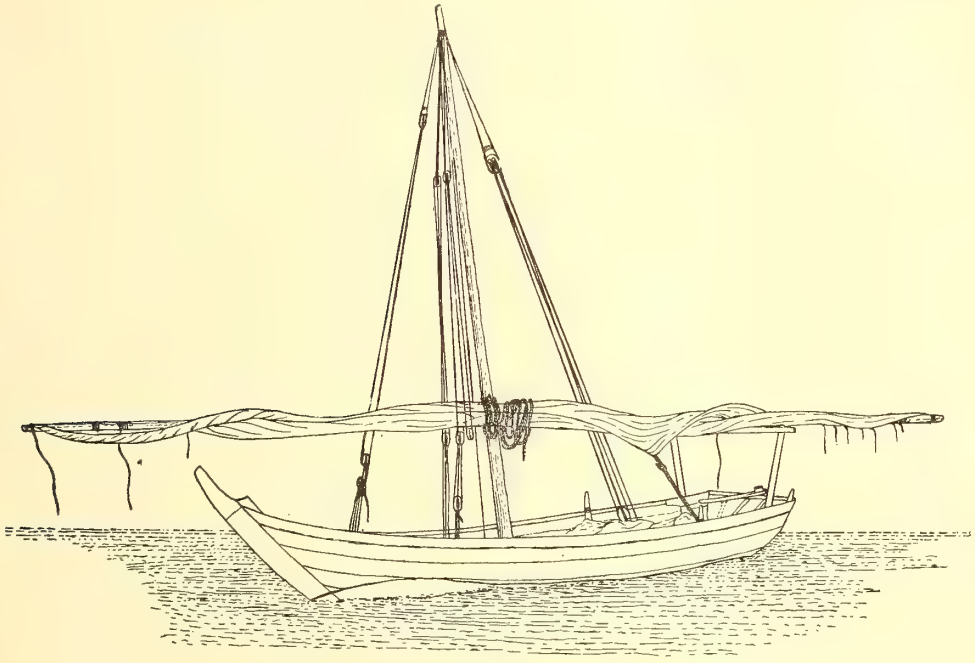

FIG. 1.—Fishing machwa, Karachi.

The *nauri* is very much like the dhangi in essential details but has a characteristic "Parrot's head" stem ornament, bespeaking Hindu influence in place of Arab. Beak and eye are distinctly recognisable with a carved crest addition at top, from which the simplified form seen in the gunjo must have been derived. They run to about 80 tons register and trade between India, the Persian Gulf and Zanzibar. They are generally built on the Kathiawar coast.

The boom or dhangi and the nauri are the least changed of the Arab type of trading vessel, bespoken by their plain double-ended form. The others, baggalas, gunjos, and sambuks as well as kotias and batels, respectively Arab and Indian, show distinct Portuguese influence, for their high poops and squared sterns derive these characteristic features directly from the early caravels. The richly carved stern and quarters of

the great baggalas and kotias are almost identical with those of 16th century European vessels of the same size.

The *machwas* used for fishing and minor coast traffic are of two varieties, one having the typical transom stern (fig. 1), the other lean in the quarters and terminating sharply in a greatly raked stern post. The latter type is by far the more common and is the fishing boat design *par excellence* on this coast and indeed as far south as Bombay. It has but a single mast, usually made to unship, and the stern is low and mean in marked contrast with the towering poop of the deep-sea type. The bow is slightly higher and more prominent than the stern, ending sharply and without ornament. Right aft is a "crutch" formed of two uprights set one on each quarter, and connected above by a cross bar on which the long yard and even the mast itself rest when the boat is lying to her nets. Still smaller is the harbour jolly boat, built on the same lines and also used largely for inshore fishing.

In the innumerable creeks of the delta of the Indus the primitive dug-out is greatly in evidence. It is of the usual type and only very rarely have I seen it fitted with an outrigger; I have however seen it as far west as the mouth of the Hab river in Baluchistan.

The Bombay Coast.

Here within the comparatively short range of 650 miles from the head of the Gulf of Cambay to Bhatkal at the southern limit of North Kanara, we get considerable diversity of coast with corresponding variety in the coast craft, which show essential differences from the Arab types of the North-West coast. The races furnishing the fisher and sailor classes are equally varied, both in origin, language, and religion.

In the northernmost or Cambay section for 150 miles we get shoal water and sandy bottom extending far to sea, and not a single harbour that can afford shelter to fishing craft. The estuaries along this coast are also rapidly silting up and hence it is that the boat people of these parts have to combine coast trade with fishing; to do so necessitates the use of large boats and hence we have the apparent anomaly of a poor fishery coast sending to sea the largest fishing boats to be found anywhere in India. The type used is a large machwa of handsome and careful construction. Of these there are about 270 in all, ranging from 10 to 20 tons burden manned by a crew of eight men. The supply of fish in their home waters being limited, the great majority of these boats resort to the south Kathiawar coast for three months in the fair weather season, taking to the carrying trade when the fishing becomes unprofitable. The cost of these boats runs to Rs. 2,500 in the case of the largest. They are undecked save for a short length at the stern. The stem is sharp and raked strongly, the stern truncate with but slight rake. The hull is nearly black in colour from frequent applications of oil and sometimes of thin tar. According to the duty required the details of rig and equipment vary. As cargo boats they carry two masts, both with the Arab lateen, and heighten their freeboard by means of temporary mat and bamboo weather-boards. When on this duty they display the characteristic Hindu "Parrot's head" stem ornament, exactly as in the big kotias of Kathiawar.

When employed as fishing boats the mizzen is not stepped ; the figure-head also is taken down and left ashore to permit of the use of a sheave fitted in a slot in the stem-head when riding to the nets. The temporary weather-boards are also removed and the boats are stripped to the gunwale in order to have the advantage of the lowest free-board possible when hauling their great nets. As typical Indian craft, the Gujarat machwas built at Bulsar, Billimora and adjacent ports, as opposed to the smaller ones of Arab design such as sambuks and Karachi machwas and jolly-boats, show an essential difference in the way the hull is constructed. In all Arab style boats the planking is laid edge to edge, thereafter rendered watertight by caulking ; in the Indian design, the edges of the planks are grooved or rabbetted to fit one another closely and in the grooves are laid strands of cotton and a layer of putty. (The latter is made by boiling together a mixture of resin and oil which is subsequently hammered into a paste-like mass). The planks are then drawn together by lashings passed through holes bored in adjoining strakes tautened by means of wedges driven in between the lashing and the planks. When drawn sufficiently tight, long iron nails are driven through the planks and the ribs, the projecting inner ends being beaten down to serve as clamps. This method of construction renders the repair of damaged planks a matter of difficulty but these men look down in contempt at what they consider the crudeness of the caulked planking of Arab-style vessels. Battelas are of the same design but larger and used only for cargo.

Where the fisher crews are Hindus (some are Roman Catholic Christians), old-time propitiatory ceremonies are carried out upon appropriate occasions, which are useful for comparison with those used elsewhere. The simplest of these is performed each time the boat leaves shore ; when the nets have all been taken aboard and the boat is moving off from the landing place, one of the crew empties a chatty of water over the prow.[1] Far more elaborate are the special rites performed usually once a season to the local deity of the locality where the fishing operations are carried on. Usually this is one of the aboriginal village deities—a goddess almost invariably. At Velan in South Kathiawar, the goddess of the harbour promontory is invoked with cries of "Mata ! Mata !" as a goat is killed and coconuts are broken at the prow. The men say they know no proper prayers, so merely invoke the deity by name. Usually several boats share the cost of the offerings, which are made on a date convenient to the men. Occasionally if one boat experiences bad luck while others are making good catches, the unlucky crew will make a special offering at their own cost to ensure better fortune. A crude vermilion figure of Ganapathi, 4 or 5 inches high, is often painted near the mast or at the stern as a further bid for the favour of the gods.

For inshore fishing, small open boats, of the same general design, of 3 to 10 tons' burden, are employed, manned by three or four of a crew.

The larger craft used solely for cargo purposes in this region—Cambay to Bombay—consist of the *battela* and the *padao*. Both may be described shortly as large editions of the Bulsar fishing machwa, battelas running from 40 to 100 tons' register.

[1] At Tuticorin the Roman Catholic fishermen similarly splash water on the bow as the boat leaves the beach ; our own custom of breaking a bottle of wine over the bows of a ship when being launched probably has a common origin.

while padaos range from 30 to 60 tons. Both are ordinarily two-masted, but occasionally a very large battela carries a third mast right aft. Both carry a long jibboom inclined sharply upwards. High-peaked rather baggy lateen sails are favoured.

Battela and padao are alike square in the stern, which is little raked; the larger battelas have a counter sometimes elaborately carved and painted, together with a rudder trunk. All have means for erecting temporary weather-boarding in the waist — a feature characteristic of all Gujarat boats, whether they be battelas, padaos or fishing machwas. As might be inferred from the geographical range, the battela forms a link between the baggala and kotia on the one hand and the more southern pattamar on the other, the stern part of the hull being closely related to the former, whereas the rig, particularly in the greater rake of the masts, the cut of the sails, and the presence of a jibboom, approximates to that of the pattamar.

Konkan Coasters.

From Bombay to North Canara and indeed as far as Mangalore, an entirely different type of coaster is seen, the pattamar. Here we get at last a design which is certainly indigenous and influenced slightly or not at all by European and Arab example.

Pattamars are readily distinguished by their great sheer fore and aft, the long curved overhang of the bow, their great beam in the quarters, particularly when, as in the true type, the stern is rounded, and more than all by the great rake of the two masts, whereof the main is often nearly as long as the foremast.

They carry a long slender jibboom rigged in or out as required and in the largest size a third short mast right aft.

The great relative length of the aftermast is noteworthy; its sail is larger than in the Arab type of boat, and instead of being seldom set when off the wind—the Arab habit—it is in general and constant use and figures as a principal and not an accessory sail.

These boats, unlike kotias and baggalas, are essentially coasters and fair-weather craft. Hence we find neither permanent bulwarks nor properly laid deck. When required a temporary bulwark of matting and bamboos is employed, further protection for the cargo and crew being provided by a pent-house structure thatched with coconut leaves, between the masts. Fore and aft there is a short length roughly planked over, the remainder being lightly covered with split bamboos laced together and laid on the athwartship beams; it is just strong enough to support a man's weight. The true type is best among the smaller sizes; these hail chiefly from Ratnagiri and Rajpur. In the larger sizes foreign influence is apparent in the transom form of the stern and in the short raised poop, very commonly seen, and the plain oiled treatment of the hull.

Pattamars have none of the fine finish loved of the Arab. No carving adorns the poop when present, neither is the hull brightly banded with gaudy colours and only some of the largest are left handsome in well-oiled nudity. Usually a coating of dull earthy paint, dark red by preference, is applied above the waterline with a black

gunwale and sometimes a white ribbon fore and aft. In those with poops and transom sterns some crude ornamental painting is attempted—stars and imitation ports the favourite. Pattamars are built chiefly at Konkan and Kanarese ports. They range up to 180 tons' register, but the majority are less than half this size.

This type has undoubtedly developed from that of the large fishing boat still used at Ratnagiri and Rajpur, which in turn, as we shall see, is evolved from a spread and built-up dug-out. The pattamar has also many points of family resemblance to the old style coasting craft of Ceylon, as typified in the Yātra-dhoni—especially in the character of the bamboo-decking, presence of a jibboom, and in evolution from an outrigger fishing boat. Comparison enables us to see how far the pattamar has travelled—the original square sails became a square-headed lug and then by reduction of the luff, the Arab lateen of the present day. Similarly the jibboom increased in size and importance, and from the sewn planking we have progressed to a bolt-secured hull. In steering, the original primitive form of rudder, completely exposed outside the stern of the vessel with tiller fitting over the rudder-head, has been retained. The palm-thatched pent-house cabin is another well-marked primitive feature.

Konkan Fishing Boats.

The section of the coast from a little north of Bombay and on as far south as Jaigarh or Jaigad, a few miles north of Ratnagiri, is generally rocky, well provided except in the north with numerous good harbours, bays, and creeks to shelter the mosquito fleet of fishing boats that crowd this coast. The fishermen are almost exclusively Hindus. The machwas in this section are large for the same reason as those of the Gulf of Cambay—their need to go far to reach the fishing grounds. A fine sea-boat is a necessity and in the larger boats hailing from the ports in the vicinity of Bombay, the fishermen have adopted a modification of the pattamar type of coaster for those which operate in offshore waters. A typical 7-ton Bombay fishing machwa measures 47 feet in length over all, with a beam of 11 feet and depth of 3 feet. The bow is long and raking with great overhang and considerable sheer, so that the actual keel length is short relatively to the beam. Hence these dimensions give a shallow beamy craft with great buoyancy both forward and aft—well adapted to the local conditions of the coast.

The rig consists of a large mainmast and small mizzen, both with considerable rake forwards; the sails are the usual pattamar lateens.

Like its large brother it possesses no permanent deck, but a temporary one is laid when necessary. These boats run the Cambay boats close in the matter of size, the larger ranging from 10 to 15 tons' burden with crews of from 10 to 12 men, the smaller from 5 to 10 tons with proportionately fewer hands aboard. Bombay harbour shelters a host of smaller single-masted machwas otherwise of similar build, together with still greater numbers of small double-ended canoe-shaped fishing boats carrying a single mast and lateen sail. All these small craft come under the generic name of *hody* but the men themselves have several distinct terms to distinguish

varieties possessing some special detail or more frequently applied according to the work they are engaged upon. In size a typical hody may be anything from 22 to 40 feet in length by $2\frac{1}{4}$ to 8 ft. beam, with a register tonnage of from $\frac{1}{2}$ to 6 tons. They represent a widened copy of the ordinary West Coast dug-out, called *toni* in Bombay, built up of planks; indeed in the case of the very small ones, the boat is actually a dug-out. An ordinary rudder is fitted to the stern post by lashings or by iron gudgeons and pintles in some boats. Stem and stern are curved at about the usual angle adopted in dug-outs. These boats are quite open and unlined, but from the stem-head to a point just abaft the mast a weatherboard about one foot wide is fitted along the gunwale to keep out the seas and spray. At times they employ an outrigger of the same form as we shall see is employed by the smaller Ratnagiri boats, to increase stability; *this locality* (*Bombay*) *marks the northward limit of the habitual use of this device on the west coast of India.*

From Bombay to Jaigarh some 100 miles south, machwas and hodys of the Bombay pattern, manned almost entirely by Hindu fishermen, continue the characteristic fishing craft in common use. From this point (Jaigarh) southwards to the Kanarese border, Muhammadan influence prevails except in Portuguese territory, where the fishermen are mostly Christian. The coast along the whole of this stretch is particularly well-adapted for fishing, the shore line indented with creeks and sheltered coves, and with numerous harbours and estuaries which provide shelter for fishing craft and coasters of every size and of varied description. The bottom right to the shore is usually sandy and hence inshore net fishing is practised to a far greater extent than to the northward of Jaigarh.

Ratnagiri and Rajpur are the two great fishing centres on this part of the coast north of Goa; the Muhammadan fishermen (Daldis) of these ports have made the name of Ratnagiri famous along the whole west coast by reason of their intrepidity and skill, in which qualities they far exceed the fishermen of Kanara and Malabar. For deep-sea work they employ a beamy single-masted lateen-rigged machwa of low freeboard, while for inshore fishing they are fond of outrigger canoes of varied form and size.

The deep-sea Ratnagiri and Rajpur boats are of three sizes, and many of them fish for part of the year, usually on contract, on the Kanarese and North Malabar coasts, regularly coming as far south as Mount Deli and occasionally to Cannanore.

These boats are employed almost exclusively in drift-netting; the two larger sizes are single-masted lateen-rigged open boats, very broad in the beam, handsome in their lines, with long overhanging bow, round stern and raked stern post. Like Danish and Nordland open fishing boats they are low in the waist—to facilitate handling of the nets—and have therefore comparatively low freeboard; both alike fit a weatherboard when heavily laden and both depend on a single mast and single sail. The smaller of the two large Ratnagiri boats returns daily to port, but the larger, which is used in deep-sea shark and ray fishing, frequently keeps the sea for several days.

The smallest type of Ratnagiri deep-sea boats is an extremely interesting develop-

ment of the outrigger canoe The basis, in common with the better known Ceylon form, is a dug-out canoe, which, having first been softened, has the sides cautiously and slowly spread by means of wedges till they attain a distinct flare. On the flared edges a series of strakes, also flaring outwards, is raised—Malay fashion—till the slab-sided crank dug-out is changed to a beamy and fairly roomy boat capable of carrying quite a heavy load of nets. A single outrigger is boomed out in the usual manner and the boat carries a lateen sail of the same type as her larger sisters.

All these boats carry a very small outrigger canoe as net tender. In this the original dug-out is left unspread, and as the outrigger can readily be dismounted this form has the advantage that it can be easily taken aboard and stowed out of the way.

A hurdle-like mast-crutch similar in form to that described above in the case of Sind fishing boats is fitted aft on Ratnagiri boats of every size. Usually it is neatly ornamented. It seems clear that the larger boats have been modelled upon the built-up canoe form, the outrigger being dispensed with as soon as increasing beam gave sufficient stability without recourse to such an awkward contrivance. To the Ratnagiri coast people seems due the credit for the first advance in boat-building made on the west coast of India ; there it is that we have to look for evidence of an outside influence long antedating that of the Arabs and the Portuguese.

The Ratnagiri and Kanarese pattamar coasters are in turn cargo carriers designed on the same general lines. On the Ratnagiri coast, using this term in a wide sense, what may be termed the Ratnagiri type of single-masted fishing machwa and two-masted coasting pattamars exist side by side with outrigger canoes, built-up outrigger boats and ordinary creek dug-outs, but after Malwan, a little to the north of Goa, the Ratnagiri machwa dies out completely, leaving the major part of sea-fishing to be done by outrigger boats and canoes, with operations confined almost entirely to the inshore waters. The largest outrigger boat is one used in seining, the so-called Rampan boat. This is merely a long, deep, widely-spread canoe-shaped boat fitted with an outrigger to give stability. Stem and stern are nearly similar and no mast is carried, the boat being rowed while the net is being shot.

After we pass Goa the number of true dug-outs employed in fishing rapidly increases, and especially at Kumpta, Honavar and Mulki, these *pūngayīs* are very numerous. They are the same as the *odam* dug-outs of Malabar. They are of considerable size, from one to 3 tons' burden, and each carries a crew of 8 men normally. In South Kanara these fine canoes are still more in evidence whereas the outrigger boat is seen only in commission in the case of the Rampan boat which, be it noted, is of comparatively recent introduction on this section of the coast, having been introduced from Goa. The Kanarese fishermen and boatmen suffer distinctly from a lack of enterprise and there is little to be learned from a study of their fishing craft. Either they are outrigger boats borrowed from their northern neighbours, or are primitive dug-outs from the south.

Typical of their lack of boat-building skill are the coffin-shaped backwater cargo carriers of Mangalore. Although this is one of the busiest ports on the west coast,

full of finely modelled fishing and coasting craft in the fair weather season, these boats are slab-sided, sharp ended, punt-shaped craft—bad plank-built enlargements of a dug-out canoe; they boast no rudder, have a single mast bearing a square sail as unnautical in shape as an inland tailor would cut and fashion but presumably are cheap to construct and answer their purpose in the calm waters where alone they are used (Pl. v, fig. 4).

Malabar and Travancore.

The dug-out and the pseudo-dug-out—its counterpart in planks—have the field entirely to themselves in this long stretch of coast from Cannanore to Quilon. The former is a beautifully fashioned craft, the latter—like the Mangalore lighter—an ugly travesty. The dug-out is more numerous and while it ranges in size from a tiny one-boy canoe to the big *odam* with its crew of eight, the plank-built canoe is usually of the large size only. It is particularly in evidence at Tanur, where it appears to be in the majority.

There is so little variation in the type that there is almost nothing to say of them. None is provided with a rudder, steering being effected by means of a big paddle on one quarter, used for propulsion as well as control. Few of them use a sail; when they do, it is either a small and ineffective square sail or a spritsail. Beach lighters, the equivalent of the masula boats of the East Coast, are again merely clumsy flat-bottomed enlargements of the plank-built fishing canoe, but the large cargo lighters which have often to carry cargo to steamers in the outer anchorage at Calicut are weatherly craft reproducing in a rough and untidy form the Arab features of grab-bow, deep fore-foot, sharp raking stern and large lateen sail. They are undecked, without poop, and are indeed but large editions of the single-masted Bombay machwa. The strength of the Arab strain in their design at Cannanore, Calicut, Beypore and Ponnani is due to the long-established trade connections between these centres and the Arabian coasts, and to the not inconsiderable infusion of Arab blood among the better classes of the local Mappilla population. Particularly close is the Arab connection with Calicut. As soon as the south-west monsoon moderates, Arab buggalas begin to arrive, those from the Persian Gulf with dates, those from Karachi and Bombay with more general cargo. The cargoes having been discharged, those requiring it are hove down on the beach to get advantage of the excellent repair facilities existing here. Then the return cargo of Gulf boats must comprise a big assortment of ship-building materials for the boat-building yards of Bahrein, Koweit, and the Tigris and Euphrates; the *nahkudah* and his men have a busy time for weeks on end, selecting and chaffering over the purchase of timber and coir yarn, blocks and bolts, and all the varied etceteras of ship chandlery. Then the timber must be sawn and the coir yarn twisted into cordage and the huge hawsers these men love, under their immediate supervision.

In South Malabar, in Cochin and in Travancore, where an extensive inland water trade exists by virtue of the great network of backwater channels in the low footland skirting the Ghats, particularly fine dug-outs are employed. Compared with the

coast canoes, they are wider and more roomy ; that they are not used on the coast is due to their great weight which would prevent easy beaching. They are undecked, but cargo and passengers are securely protected against rain by a beautifully constructed arched roofing of cadjans made partly in sliding sections for ease in loading and unloading. Paint is never applied and save in the ornamentation of the prow they are severe in line and wanting in decoration. A rich aroma of ancient and rancid fish oil hangs over all, this being found most effective as a preservative for the wood, to which it imparts a rich brownish-black tint that harmonizes with the heavily shaded banks of these tree-shadowed waterways.

For festive occasions specially long and narrow canoes are brought from their sheds. These are known generally as snake-boats, and while those of Cochin are remarkable only for their length, those of Travancore are unique in design throughout India. Instead of being deep and slab-sided as in the Cochin type, the Travancore snake-boat has had the gunwale so cut down that the transverse section of the boat is a very shallow crescent ; the freeboard in consequence is reduced to a minimum. The stern curves high above the steersman in fashion like that of the Phoenician galleys depicted on Assyrian sculptures. Like the latter also the prow is remarkably low and ram-like, ornamented in the case of the Travancore boat with a large metal boss in the place where the bronze spur occurs in ancient war-galleys. A further point of resemblance is that the oars end in rectangular paddle blades.

Apart from the modern cargo lighters which date back only to the introduction of steamer traffic on this coast, no sea-going vessels have here their home. This is not due to any lack of skill in shipbuilding for the Malabar shipwright class are renowned as among the best of their craft in India, so much so that they are in demand as foremen shipwrights in the building of lighters, schooners and brigs at every shipbuilding centre on the south-east coast from Tuticorin to Negapatam where this industry still flourishes.

The cause is to be sought rather in the lack of maritime enterprise in the coast population. Stranger craft, chiefly from the Bombay coast, have ever been ready to do all the coast-wise traffic, so, to compete therewith has needed greater enterprise than the somewhat lethargic or phlegmatic Malayali can compass. Competition would have indeed to be vigorous to oust the Kutch kotia, the Konkan pattamar and the Tuticorin dhoni, and life is too easy in Malabar to justify such exertion. The damp and enervating climate is a very potent brake upon energy and enterprise on that coast.

Before rounding Cape Comorin and entering on a world where entirely different conditions prevail, we may note :—

(*a*) That purely Arab designs prevail along the whole north-west coast.

(*b*) That while the Arab types have influence from Cambay to a distance of some 100 miles southwards of Bombay, the purity of design has gone and some notable modifications have been introduced ; chief of these are the increased value given to the mizzen sail and the addition of a small jib.

(*c*) That on the Ratnagiri coast the larger boats, both those used in fishing

and coasting, appear to have their hull modelled on a more beamy and shallower type than anything based upon the fundamental Arab design. As the Ratnagiri men employ for their lighter inshore work a much flared dug-out with built-on upper strakes also flared, it is probable that their large boats, beamy and of little depth, have been evolved from the flared dug-out rather than from the deep Arab type.

(*d*) Between the Ratnagiri region and that of South Kanara, the outrigger in various forms, but none so highly developed as in the Ratnagiri craft, is dominant and hence suggests long-continued employment, and an ancient foreign connection long antedating the advent of Arab influence.

(*e*) Malabar and Travancore furnish uniform and purely indigenous types of canoe as the only craft in local use, with the trivial exception of recently introduced cargo lighters of Arab design and of a curious form of backwater "snake-boat," used for important water festivals in Travancore, which shows a surprising resemblance in important points with the Phoenician type of armed galley ; this is probably merely a case of parallelism.

Gulf of Mannar Region.

As Cape Comorin is approached going south along the Travancore coast, all the familiar landmarks of the southern section of the west coast begin to change. The Malayali language becomes corrupt with Tamil admixtures, and eventually is lost in an equally uncouth and corrupt Tamil; the habits and customs of the people are also Tamilized, and even more notable is an alteration in the character of the vegetation. The dense humid tropic lowlands where plant life riots in luxuriance and where the coconut dominates all cultivation, gives place to naked sand wastes, the coconut withers away and in its place rises stiff and unbending the formal Palmyra palm and the inhospitable babul. Coincident with these changes, we find the methods of fishing also begin to alter. The crank dug-out canoe to which the Malayali adheres with such touching fidelity, as far north as Quilon finds its supremacy challenged by small catamarans of primitive form, constructed of from 4 to 5 logs tied together raft-fashion. From Quilon southwards both forms of craft exist side by side as far as Colachel where catamarans of improved form—"boat-catamarans"—appear and finally oust both the dug-out and the raft catamaran. Between Colachel and Cape Comorin the coast is particularly exposed and surf-beaten throughout the year and is also bare of any landing place suitable for dug-out canoes. Beyond the Cape the same form of catamaran is numerous for over 100 miles, ending only at Mukkur in the Ramnad district. Throughout the whole of this tract of coast the only important caste of fishermen is that of the Roman Catholic Parawas, whose ancestors for political reasons become converted to Christianity on the coming of the Portuguese. Besides the boat-catamaran these people use largely a second type of craft—the "boat-canoe"—which consists of a Malabar dug-out spread by wedges and heightened by flared wash-strakes of 9 to 10 inches

in width. The two types exist side by side save at a few very exposed centres such as Cape Comorin, and both are worked exclusively by Parawas. Nowhere else in India is either type found, so that this strict limitation, being regional as well as racial, is particularly notable. The boat catamarans vary little in size (fig. 2). They are worked normally in pairs and usually one of the two is slightly longer and wider than the other, the former being 23 feet long by 3 feet wide, the latter $20\frac{1}{2}$ feet by $2\frac{1}{2}$ feet. Of the three logs of which they are made the central one is stouter than the

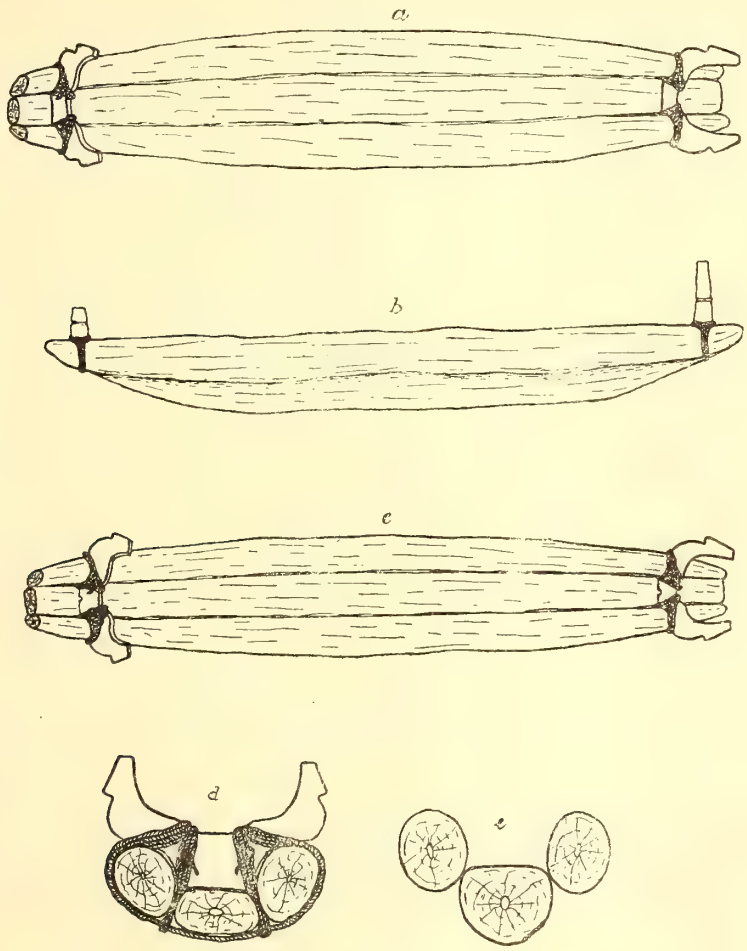

FIG. 2.—Boat catamaran of Cape Comorin and the Tinnevelly coast. *a* and *c*, large and small units of a pair; *b*, side view of *a*; *d*, transverse section near one end; *e*, transverse section at mid-length.

side ones; the whole three are shaped and fitted together in such a way that the central one fits keel-wise at a lower level than the other two which rise sufficiently high to form a trough-shaped hollow above. At each end the logs are planed flush on the under surface to give an easy entrance. The three are held in position by a transverse two-horned block of wood at either end, whereto the logs are lashed securely by coir ropes passed through grooves cut in the sides of the logs. Usually two men form the crew, using, instead of wooden paddles, short lengths of split bamboos wherein they differ from the Coromandel catamaran men who use broad-

bladed paddles of two designs. When paddling, which they do as seldom as possible, they frequently stand up spooning the water rather than rowing or paddling. That early English mariner who saw them miles out from the coast and probably was the first Englishman to make reference to them, may well be excused for recording his surprise at seeing "distinctly two black devils playing at single stick. We watched these infernal imps about an hour, when they were lost in the distance. Surely this doth portend some great tempest." [1] The description exactly pictures the scene if one be far enough away to overlook the catamaran which floats almost level with the water.

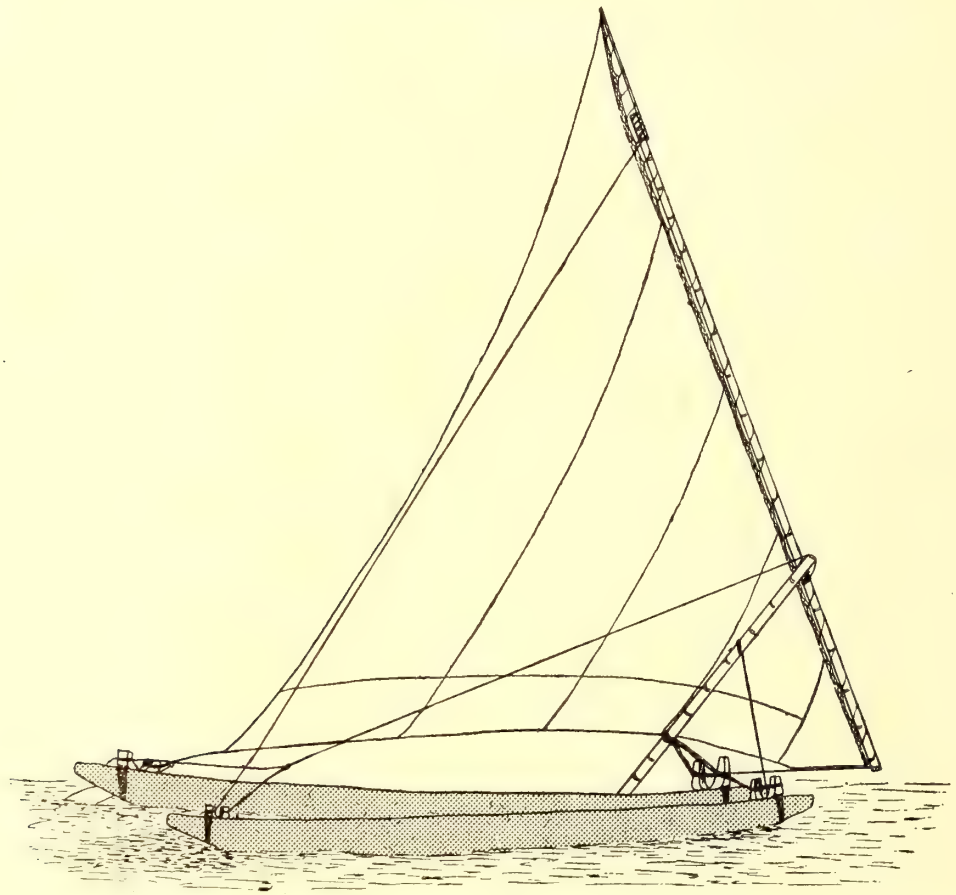

FIG. 3.—A pair of boat-catamarans under sail. Tuticorin.

Unlike Coromandel catamarans, the logs are kept permanently tied together; they are neither painted nor oiled, neither is any ornamental carving employed.

To go to and from the fishing grounds a small triangular and nearly equilateral sail is used, fitted to the head of a diminutive spar 10 feet in length, set up with a strong rake forward right in the bows, *i.e.* at the end which functions as such—both ends are almost alike in structure. A light bamboo yard of considerable length (34 feet) carries the brown tanned cotton sail (fig. 3). Mast and sail are common to each pair of catamarans, the mast being stepped in the larger while the sheet is led to the

[1] Quoted by Thurston, E., *Castes and Tribes of S. India*, VI, 179.

stern of the smaller, of which the fore end is lashed to the other. The two craft do not lie quite parallel to one another when sailing but diverge slightly aft. This particular form of catamaran appears to be favoured on this coast rather than the wider one seen further north, as affording greater stability in the wicked short cross seas that so much prevail in this region. On the other hand the great surf rollers that career shorewards over long stretches of shoals on the Coromandel coast can be ridden over much more safely by a broad-built raft than by a heavy, deeply keeled craft. The Comorin and Tinnevelly coast is also fairly well served by little coves and bays, which give just enough security even in bad weather for the safe beaching of these catamarans.

Catamarans are used almost exclusively in that particular form of fishing where the madi valai is employed. This net is a deep-water or boat seine shot from two partner catamarans across the path of shoaling fish. The almost total absence of freeboard in the catamarans enables this net to be hauled with ease, not possible in the high freeboard boats next to be described—a quality that goes far to ensure the survival of this apparently antiquated type.

For other forms of fishing on the Tinnevelly coast, the boat-canoe already alluded to is exclusively used. For the principal methods different sizes are employed. All are termed *ballams* or *vallams*, almost the same term as is used by Mesopotamian Arabs for all dug-out canoes and for all boats of canoe form—long, narrow and keelless.

The essential differences between these canoe-boats and the ordinary Malabar dug-out, is that the original dug-out has been spread and its sides raised so that considerable stability is acquired. Instead of depending on paddles for propulsion these boats are designed primarily for sailing and on a fair wind they have a fine turn of speed. Close hauled they perform badly as they are wholly without keel, having retained the original rounded bottom of the dug-out.

The mast is of medium height and is fitted nearly amidships. The rig is a single short and wide lug, not very far removed from the square sail from which it is clearly derived (fig. 2, pl. v). Except in enlarged models built wholly of planks upon the same lines for coral-stone work, no mizzen is carried. A peculiarity of these canoe-boats is a double pulley fitted in a square truck upon the extremity of the mast to which point the yard is hoisted. Owing to the high freeboard and the lowness of the thwarts, so placed to secure good stability, rowing is difficult and wearisome to those not accustomed to these boats. In one case in which we lent one to some Kilakarai divers they complained so bitterly of this, that fresh thwarts had to be fitted six inches higher than the original ones.

A powerful rudder of elegant shape is employed, fixed with the usual gudgeon and pintle; it descends considerably below the rounded bottom and thus contributes slightly to reduce the disability of want of keel. It is strange that the use of a leeboard is unknown or unpractised seeing that this is employed regularly by the outrigger boats of Ceylon, Kilakarai and Palk Bay. The introduction of this useful accessory is therefore one of the minor improvements now being brought in by the Madras Fisheries Department.

Various sizes of these vallams are used according to the nature of the fishing. The largest, having crews of 7 or 8 men each, are used in line fishing, 7 to 10 miles off shore; a slightly smaller size, about 27 ft. long, is used in off-shore drift netting and by divers engaged in the chank fishery, while still smaller ones are used for inshore lining and netting.

At Tuticorin a few of the largest size are employed also by coral-reef quarriers to supply stone to the local building trade and sea-worn madrepore branches (*chulli*) to lime-burners. The bulk of this coral-stone work is however carried on by large

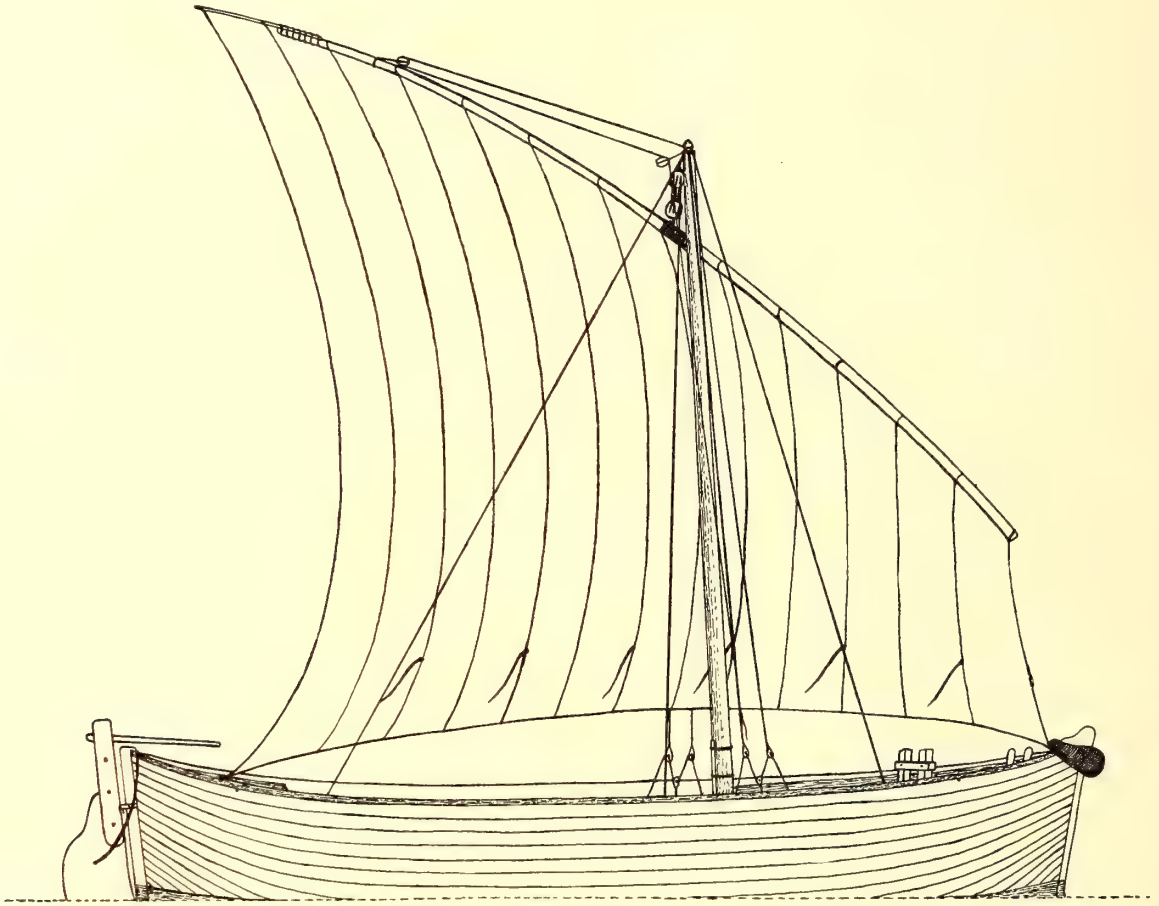

Fig 4.—A Tuticorin cargo lighter.

plank built boats constructed as already mentioned on similar lines. The average dimensions of these are :—length 34 feet, beam $6\frac{1}{4}$ feet, depth $2\frac{3}{4}$ feet, with a load capacity of about two tons. Usually they have the same rig as the dug-out type, but when on a coasting voyage they generally fit a short mizzen carrying a small lug. At the same port (Tuticorin) a fine fleet of sailing lighters and coasters has been created since steamer traffic was introduced, and nowhere can the successive steps in the evolution of a new and dominant type be better studied than here. When coastal steam traffic developed on the Indian coast about the middle of last century the cotton pressers of Tuticorin built or brought to the port several square-sterned sailing lighters on Eng-

lish lines, rigged as small schooners with fore and aft sails and jibbom. The trade appearing likely to prove lucrative, some of the local Parawa boat-owners began to build other lighters. They rejected the English model as this had been found unhandy in going alongside steamers; instead of that they followed in simplified fashion the lines and rig of the Arab buggalas which at that date regularly traded between Busra, Bombay and Tuticorin. The boat-builders while adopting the raked stem and stern and lateen rig, made both stem and stern sharp as in present-day Calicut lighters. The model did not serve over-well and gradually the rake of stem and stern was reduced till to-day both are almost vertical and the mast instead of being raked forward is now raked very slightly aft and is fixed at about one-third the boat's length from the bows (fig. 4). The present-day lighter appears as though it had evolved directly from the plank-built canoe used in the coral-stone trade, a course which it has not followed as shown above. Originally Tuticorin lighters, having been introduced by English firms, were known locally as "boats" (*boatu*), but now this has given way to the vernacular term of dhoni.

It is interesting to know that the first built native lighters had their bottom coated with white chunam pitch in the Arab style. Later some owners employed tin sheets as a protection, and then with greater prosperity the further step was taken of sheathing in copper. A few have tried Muntz metal sheets, but the general opinion is that copper is the only reliable metal to use. In this I concur, experience of the yellow metal which sheaths the bottom of our Inspection schooner showing it is no protection whatever against the settlement of oysters and other growths, whereas lighters sheathed with copper keep clean and unfouled. No further sail than a single big lateen is used when engaged in lighterage to and from steamers lying in the roads (fig. 1, pl. v), but when coasting between ports—they now go as far up the East Coast as Bombay—they add a jib and small lateen mizzen.

Quite recently a further evolution has been made, an enterprising boat-owner having built several larger vessels (*padagu*) solely for coasting trade. They are two-masted and fully-decked, but retain the straight stern of the lighter design. As regards rig, they are fitted with jibs but whereas the first one built had a great lateen on the main mast and a fore and aft sail on a big mizzen, the later ones exchanged the clumsy lateen for another fore and aft sail, so that now the final form evolved is a fore and aft schooner rig such as one may see anywhere in British seas among small coasting craft in out-of-the-way places.

CEYLON.

No greater contrast can be found in boat designing than that between the types used on the opposite sides of the Gulf of Mannar south of latitude 9° N. On the Tamil or Indian side the catamaran and boat canoe alone are used; on the Sinhalese side, the outrigger canoe is the national and dominant design, the catamaran being used only in the northern or non-Sinhalese part of the island, and by immigrant Tamil fishermen at Colombo, while the dug-out is restricted to its proper sphere on rivers and other inland waters.

The outrigger canoe, called *oruwa* in Sinhalese and *kūlla* in Tamil, as used in Ceylon is one of the most distinctive craft in the world; moreover its form has become strictly stereotyped, bespeaking very long lineage and an end to the experimental stage. As we see it thus fixed in design, the hull consists primarily of a long dug-out with tumble-home curve along the upper side. Upon the original gunwale is sewn with coir yarn a wide vertical wash-strake on either side, leaving a well-shaped opening running the length of the boat, so narrow that sitting on a boom where it crosses the hull—there are no thwarts—a passenger can usually accommodate only one leg inside!

The rig is a high and somewhat narrow double spritsail of large area. The mast sprit is a stout, carefully chosen bamboo stepped exactly amidships. The other sprit is fully as long and only a little less strong than the mast. The sail is cotton, usually tanned brown. The outrigger float is a carefully-shaped well-smoothed log of light wood, boomed out permanently by two cross pieces made up, not of a single pole as in the Kilakarai outrigger boats shortly to be described, but of a number of thin flexible pieces bound tightly together fascinewise.

In outrigger canoes used for sailing, the outrigger must necessarily be on the weather side in order to give the necessary counterpoise. Now the Ceylon type having a permanently fixed outrigger, cannot have any definite stern or fixed rudder. Accordingly we find the two ends are similar, so that either may function as bow as required. In place of a rudder a long-bladed wide paddle is used on what should answer to the quarter, being supported in a coir grommet passed through a hole in the gunwale. On returning from sea with the wind in the same quarter, the sail has to be reset on the other side of the mast and the quarter paddle shifted to the other end of the boat which now becomes transformed from bow to stern. To compensate for lack of keel, a powerful leeboard is carried at each end, to be used according to which end of the boat is acting as stern. No other boats except these Ceylon outriggers and those used in Palk Bay and Strait and around Kilakarai appear to use this most useful contrivance. It is never used for example in the boat-canoes of the opposite Indian coast, whose most notable weakness is inability to sail close hauled and which make a terrible amount of leeway in such circumstances.

The Sinhalese are so wedded to the outrigger that they also apply this device in the design of their small coasters. These were at one time very numerous in the carrying trade between the island ports, giving such an old-world touch as we seldom see in these prosaic days of fussy steam coasters. These Yathra oruwas as they are termed, run to 50 tons' burden. They are usually fitted with two-pole masts and a short bowsprit and are provided with a boomed-out outrigger of massive size, similar in general structure to those of the fishing boats. No iron is used in putting the hull together; the planks are sewn together with coir yarn in the same manner as is employed in building the masula boats of the Madras Coast, the work being rendered watertight by laying over the joints long strips torn from the leaf stalk of palm leaves, with dried plantain leaf stalks put between the plank edges as caulking. To sew the planks together a row of closely set holes is bored along the edges of adjoining planks and

through these holes coir yarn is passed and tightened over the caulking strips which are placed both inside and outside the seams in the hull.

No deck is provided, the cargo when loaded being protected by a penthouse covering, thatched with cadjans, a method adding to the archaic appearance of these old-world craft. They hail almost entirely from the coast villages lying between Colombo and Galle—the south-west coast—a purely Sinhalese region save for some settlements of so-called "Moormen"—the descendants of Indian Muhammadans from the opposite side of the Gulf. Few of these outrigger dhonis are now in existence and soon they will disappear entirely. Their survival or rather their presence on the Ceylon Coast is of much interest ethnologically in view of the representation of ships of the same general type among the sculptures on the great Buddhist shrine at Boro Budur in Java, dating back to between 750 and 900 A.D.

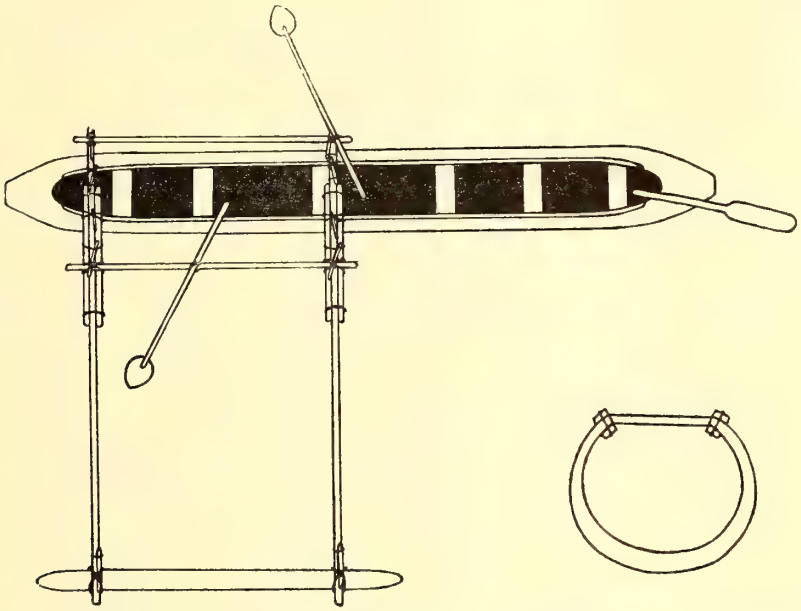

FIG. 5.—Outrigger canoe used by Jaffna schooners and dhonis as ship's dinghy.

The Tamils of the north of Ceylon and the Jaffna Islands do not employ outrigger canoes except small ones carried by coasters for communication with the shore (fig. 5), using instead, according to the character of the coast, either catamarans or dug-out canoes for ordinary fishing, and undecked plank-built boats for pearl and chank fishing and light cargo work. These last-named are of no special interest, being merely large boats built on the lines of a broad canoe. They have a single mast stepped a little forward of amidships; the rig is a square lug little removed from a square sail. The yard is hauled to the mast-head through a square two-way pulley fitted permanently to the top of the mast, in the same fashion as that followed by the smaller Tuticorin fishing canoes. This square pulley truck is characteristic of the Jaffna rig, as is the love of their owners for a bright green or blue coat of paint over the whole hull, in this differing alike from the Kilakarai habit of leaving the planks bare and from the sombre Tuticorin preference for a coat of tar.

KILAKARAI.

The Muhammadan fishermen of Kilakarai and the neighbouring villages on the south coast of Ramnad district, at the north-west corner of the Gulf of Mannar, constitute the main diving force whenever a pearl fishery is held in Ceylon waters; yearly they spend some six months in north Ceylon waters fishing chank shells. Hence their relations are most intimate with Ceylon and this may have determined the outrigger canoe as the type of boat adopted here for general fishing purposes. But while the true Ceylon outrigger in its typical form is largely used for trolling by these men, the boats being imported ready for work from Ceylon, those engaged in other methods of sea-fishing, except for pearl oysters, while agreeing in the

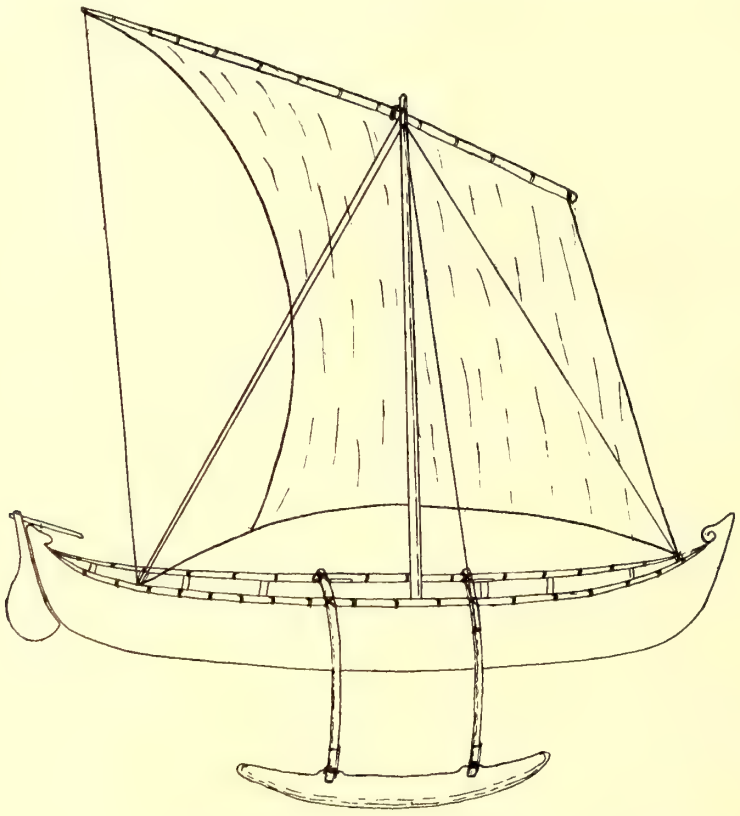

FIG. 6.—A Kilakarai outrigger fishing-boat, with two booms.

adoption of the outrigger principle, have shown marked ingenuity in modifying it in several notable details, whereby it has become much more useful for general purposes in contradistinction to the specialization adapted in Ceylon to one limited and specific aim—that of trolling for large fish of the mackerel family.

Two varieties of these modified outriggers exist, the one using a single pole to boom out the outrigger, the other employing the normal two (figs. 6 and 7). The hull is a simple Malabar dug-out canoe, with usually a *narrow* wash strake added vertically —not flared. The rig is a simple squat lugsail of the same form as is employed in the Tuticorin fishing canoes. No attempt is made to spread the canoe, so without

an outrigger it can be used only in calm weather. It is so used occasionally but normally the outrigger is fitted. The latter is smaller than the Ceylon type and boom pole or poles are weaker and each consists always of a single pole without fascine strengthening. But the most remarkable divergence is that these outriggers are made to unship instantly by a very simple device and can be rigged out on the other side of the boat, thus avoiding the unseamanly custom of the Sinhalese who can never say which end of canoe is the head without looking at the direction they may happen to be sailing! The Kilakarai boats can therefore employ a rudder fixed at the sharp curved stern by the orthodox pintles and gudgeons. The details of

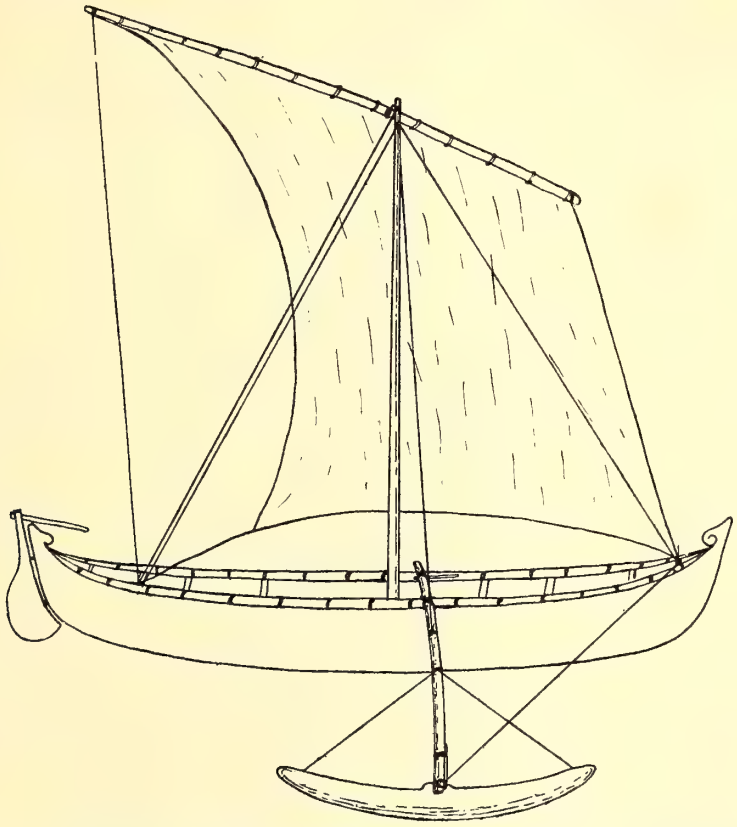

FIG. 7.—A Kilakarai outrigger fishing-boat furnished with one boom only.

the stays led to the outrigger are readily seen in the sketches given. The device for attaching the booms inboard on the one side and to the outrigger on the other is a form of the Spanish windlass, well known to sailors and shipwrights for exercising force in bending a plank into position and holding it there till secured; the principle is that of the surgeon's tourniquet. In the present instance the loop end of a ring of rope or grommet is passed through a hole either in the gunwale or in the outrigger float, the boom pole is laid over this and the looped ends of the grommet are brought up at each side and over the pole; the end of a short rod or stake is passed through the two loops and then by the simple device of twisting the two loops round one another by means of the rod, the two main parts are bound together with

the greatest possible tightness. The free end of the tourniquet rod is then seized to the gunwale or the boom as the case may be, and if the various parts be sound, this lashing will maintain attachment under any ordinary violence. Its chief advantage lies in the rapidity with which it can be operated. A couple of seconds suffice to release the boom and scarcely more are required to reship it.

For pearl-fishing work large carvel-built boats, long and narrow, are used, designed on the lines of a dug-out canoe; they accommodate a large number of divers, and by their length and narrowness are capable of being rowed with the

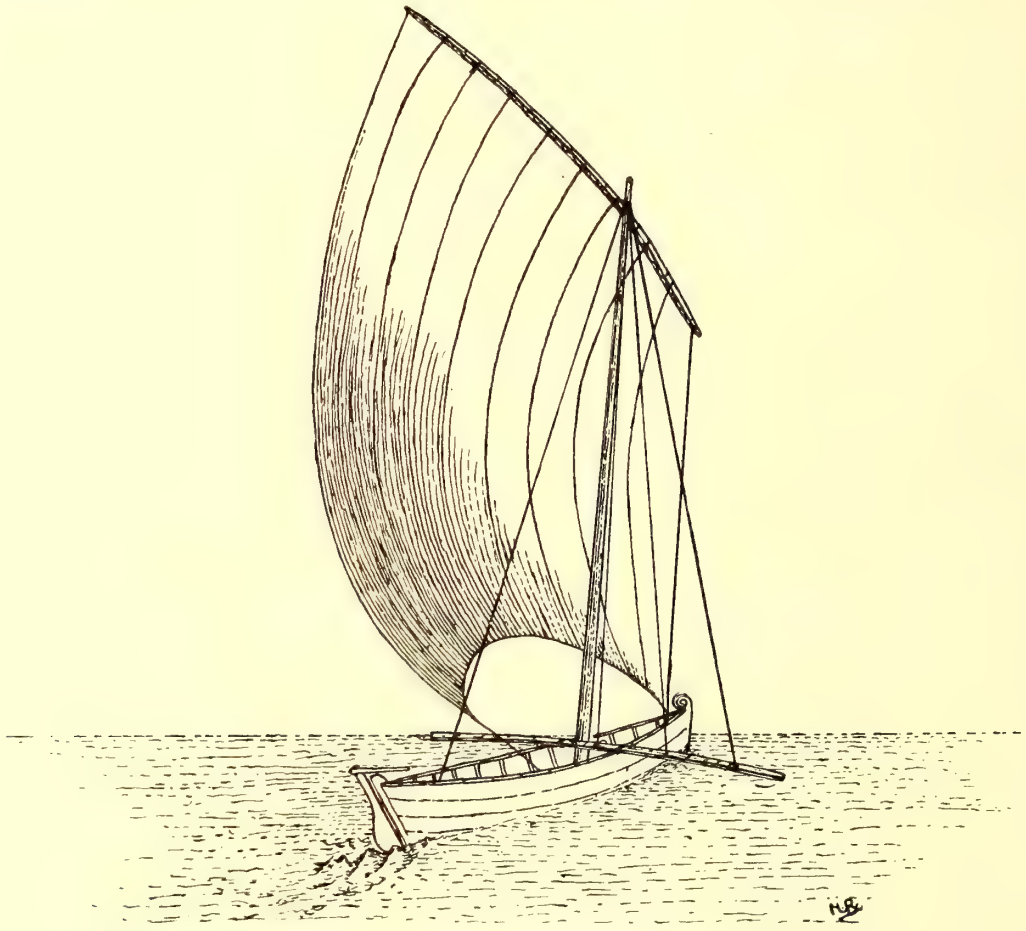

Fig. 8.—A balance-board fishing canoe of Tirupalakudi, Palk Bay.

minimum of exertion from place to place in search of a good pitch. Both ends are sharp, the point of the prow being wrought into the usual coiled ornament.

Palk Bay and Strait—Indian side.

From Pamban in the south to Muthupet on the north, this region has a very distinctive type of fishing canoe. It comes into the class of outrigger canoes, but instead of stability being obtained by a float boomed out on one side, the outrigger consists of a long and heavy plank laid athwart a dug-out canoe or a carvel-built boat (both are employed), so that each end projects out-board a con-

siderable distance on either side. By loading the projecting section on the weather side with one, two, or three of the crew, a very efficient counterpoise is obtained.

Two main varieties exist, the southern form employed from Rameswaram in the south to Ammapatnam, halfway up the west side of the bay, and the northern which is seen chiefly at Adirampatnam, Muthupet and the neighbouring villages on the northern shore. The hulls of the former may either be dug-out canoes or, when large, carvel-built plank boats of the same general form. The rig is a square-headed lug, set on a mainmast stepped a little forward of amidships. The outrigger in these consists of a long plank of heavy palmyra wood stayed only by a shroud on either side, led to the mast-head (fig. 8). In any but the finest weather the lee shroud is

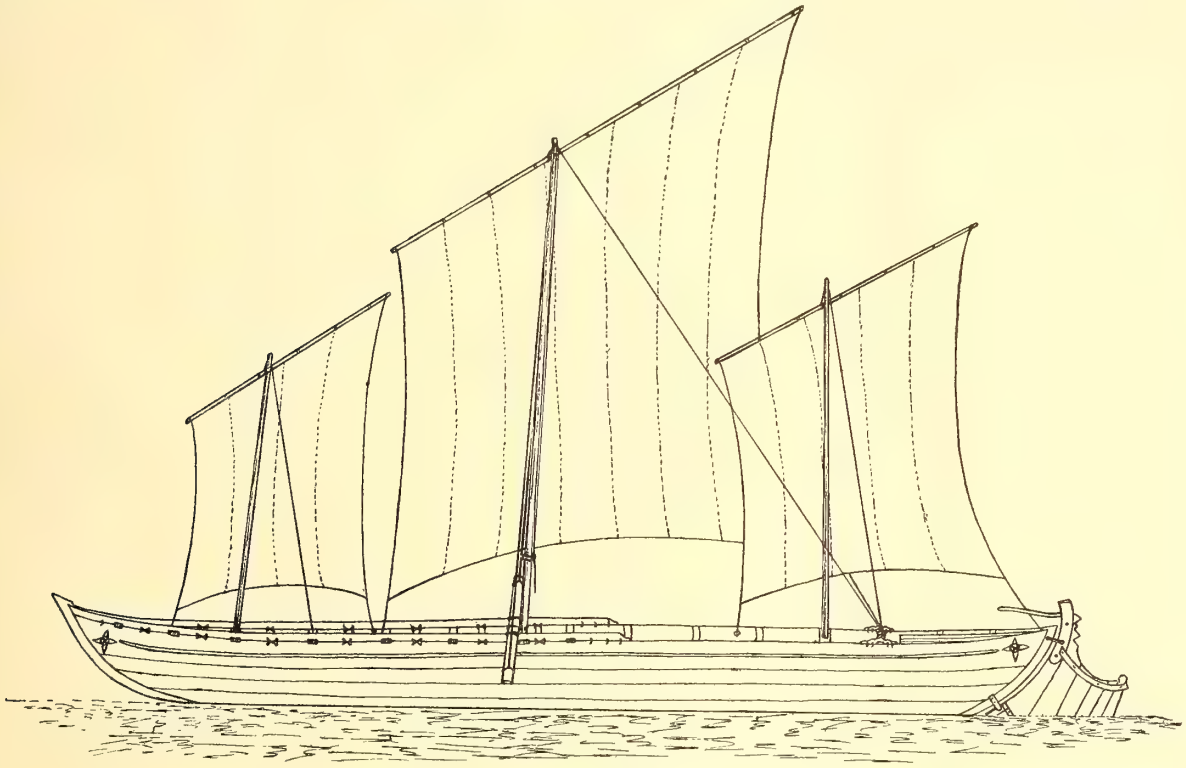

FIG. 9.—A large Muthupet balance-board boat. Palk Strait.

transferred to the weather side of the outrigger plank which then has two shrouds—one at the far end, the other some distance inwards. At the same time the lashing of the plank being loosened, it is run out some distance further on the weather side, giving a lop-sided appearance but increasing the counterpoise leverage. The shrouds give grip to the men stationed on the weather end of the plank.

In the northern varieties, for they differ considerably among themselves in detail, the hull is usually narrower and longer than in their southern sisters, while the majority have a quaint three-masted rig that separates them decisively from any other Indian coast craft. Those of Muthupet, called *vălă văthai*, are the longest in this locality and instead of being dug-outs are narrow carvel-built boats of canoe form (fig. 9). The average length is 43 feet, with a beam of $4\frac{1}{2}$ feet; depth $2\frac{1}{2}$ feet. The crew consists usually of five men.

Of the three masts the short foremast ($13\frac{1}{2}$ feet long) is stepped right in the bows, the mainmast of 22 feet a little forward of amidships and the mizzen ($14\frac{1}{2}$ feet) fairly far aft. Only the mainmast is furnished with stays, one on each side to the projecting end of the balance board and one aft. The sails are square-headed lugs. The balance board, *kadisu*, about 17 feet in length, is a plain plank as in the southern forms; according to the nature of the weather some of the crew, in emergency the whole available four, stand outboard on the weather section to prevent capsizing. As the bottom is rounded and without keel owing to the shallowness of their muddy home river, leeway is counteracted by a useful-sized leeboard; with a good wind these long narrow boats under full sail are accounted the swiftest in

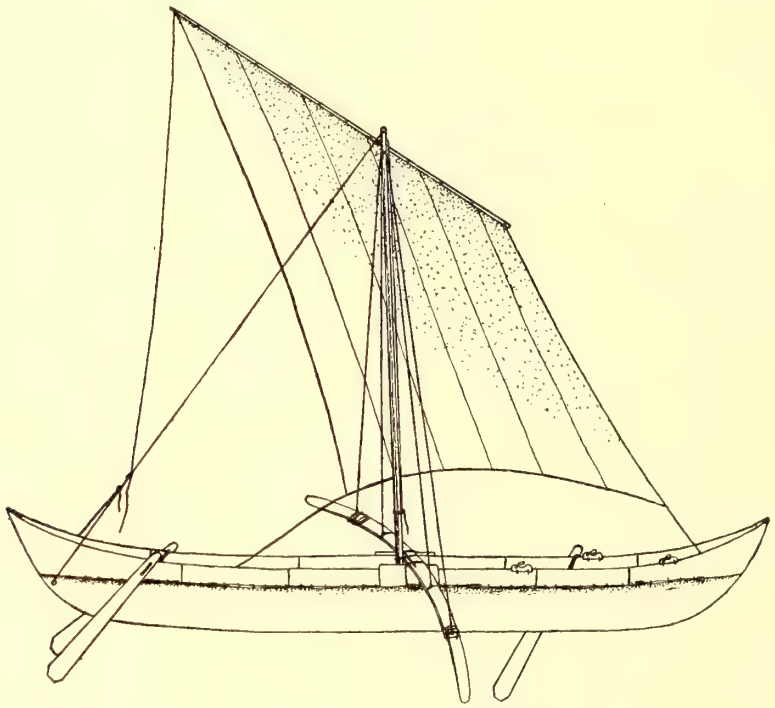

FIG. 10.—An Adirampatnam fishing canoe.

these seas. The rudder is large and powerful, attached by pintle and gudgeon at the lower end and by a coir lashing below the tiller.

Nearly 200 of these boats hail from Muthupet and the adjoining villages. Some owners leave them bare of paint, while many paint the hulls any colour from gaudy green or blue to sombre black and then ornament the whole length of the sides with crude and conventional devices; the most frequent are diamonds, flags, flower sprays and birds, roughly and inartistically executed, and wholly without vigour or spirit.

Their occupation is that of net fishing but the lure of the pearl sometimes attracts a few to the Ceylon pearl fishery, where their peculiar rig and long narrow hull and curious ornamentation render them conspicuous.

At the neighbouring port of Adirampatnam the fishing boats are generally

shorter; the majority are dug-outs fitted with wash-strakes and balance boards and while they occasionally use three masts as at Muthupet, they usually employ the mainmast only (fig. 10) and less frequently a mizzen in addition. The characteristic features are the use of a pair of quarter steering-boards instead of a fixed rudder, and the employment of a compound balance board.

The former have the shape of lee-boards; one is attached on each quarter by a loose lashing passed under the end of the sternmost thwart. The steersman sits right aft on a short decked space and manipulates the quarter steering boards with his feet. The sea for a long distance from Adirampatnam is very shallow and muddy, rendering the use of a fixed rudder troublesome, hence the survival of a peculiar variation of the quarter paddles used before the invention of the fixed rudder. In addition a leeboard is also employed by all these boats.

The balance board or *kadisu* is exceptionally long. In the largest boats, which run to 37 feet in length, it attains fully 34 feet in total length (fig. 11). Unlike all the balance boards hitherto described it consists of three sections, a median portion 19 or 20 feet long laid athwart the boat immediately in front of the mainmast, with a terminal flattened or bladeshaped section 6 to 7 feet long, added at either end. The latter is thinned and broadened at its further end and slightly twisted, so that the forward edge is depressed a little. The splicing is done by overlapping the ends, which are secured in place by (*a*) a stout square peg passed through both in the centre of the splice, and by (*b*) a rope lashing tightened by means of a Spanish windlass. Usually two side stays pass from the mast-head on each side to the balance board, one being attached a short distance outboard, the second where the terminal blade is spliced to the main plank. In others only one stay is used on either side. In all other boats the balance board is heavy and straight; here it has a graceful droop downwards on either side; its position is permanently fixed and there is no jockeying with it in rough weather beyond the loading of the weather section with one or more of the crew. All the attachments of the balance boards both to the gunwale and to the blade terminals are made by means of the tourniquet device described on p. 161.

The plank-built canoes, *pălăgai kăttu văttai* (fig. 11), are as nearly similar as they can be made to the dug-outs. Sometimes they have a second and shorter balance board, about seven feet long, abreast the mizzen mast; this has no stays led to the outboard ends, and none of the crew ever perch upon the weather end as they do in the case of the main one. Even in the case of the latter there is less recourse to loading it with men than in any other form; the principle of the balance pole is here most perfectly utilized.

The dug-out form is fitted with a high wash-strake, about 9 inches deep, sewn to the slightly tumble-home edges of the dug-out gunwale.

In Adirampatnam there are about 90 of these boats, 60 being dug-outs, the remainder plank-built. The size of the latter ranges from 18 to 37 feet, with a beam between 2 and 3 feet and depth of $2\frac{1}{2}$ feet. Very light draft is necessary; before the shore is reached long stretches of mud have to be passed. Usually each boat has its

own channel home; at low water these long channels, 2 to 3 feet wide, make the mud flats look like a great railway yard with many sidings.

In the shelter of Point Calimere is a little port called Kodikarai, once of much importance in cross channel traffic with Ceylon, now practically forgotten. It is however an important fishing centre as the fine fishing grounds of Palk Strait are most conveniently reached from here. On the beach we see craft of notable form, the one a heavy transom-sterned cobble used in fishing, the other, one of the most peculiar boat survivals in India; at first sight it is liable to be taken for an overgrown and antiquated form of the smaller fishing cobble. It is in reality the largest and heaviest of any balance-board boat surviving in India (fig. 12). Its local name is *kăllă dhoni*, which

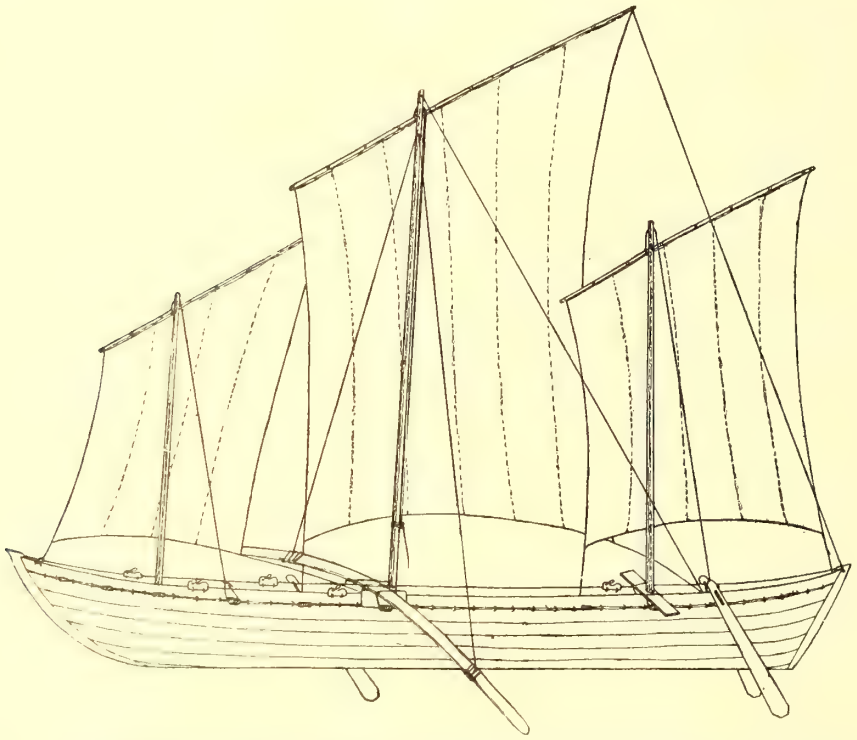

Fig. 11.—Three-masted balance-board boat of Adirampatnam (Palk Strait).

being interpreted means "thief-boat"; the only explanation given for this name is that "like a thief, this boat runs very fast."

The hull is of clumsily built carvel form, the fore end curved, with fairly heavy bows. Aft is a low decked-in poop, a foot or so higher than the waist. The stern is of transom design, and is nearly vertical, but instead of the powerful rudder being hung on the sternpost in the usual fashion, the latter is built out at right angles to the stern with thick planks, heavily strengthened with stout battens, to a distance of about four feet. Upon the posterior edge of this is hung a very large rudder, of the heavy and clumsy type characteristic of river and canal craft and seldom seen in sea-going vessels. The rig consists of three squarish lug sails borne by three masts. The very short foremast, only 10 cubits in length, is fixed without stays right in the bows,

with a well-marked rake forwards; the mainmast stepped amidships is 30 cubits long while the mizzen mast of 28 cubits in length rises from the fore side of the poop. Both the latter masts are almost vertical. The outrigger is of the balance-board type seen in the southern Palk Bay fishing boats, differing however in being relatively much shorter; it consists of a heavy palmyra plank laid athwart the gunwales; it projects a few feet outboard on each side.

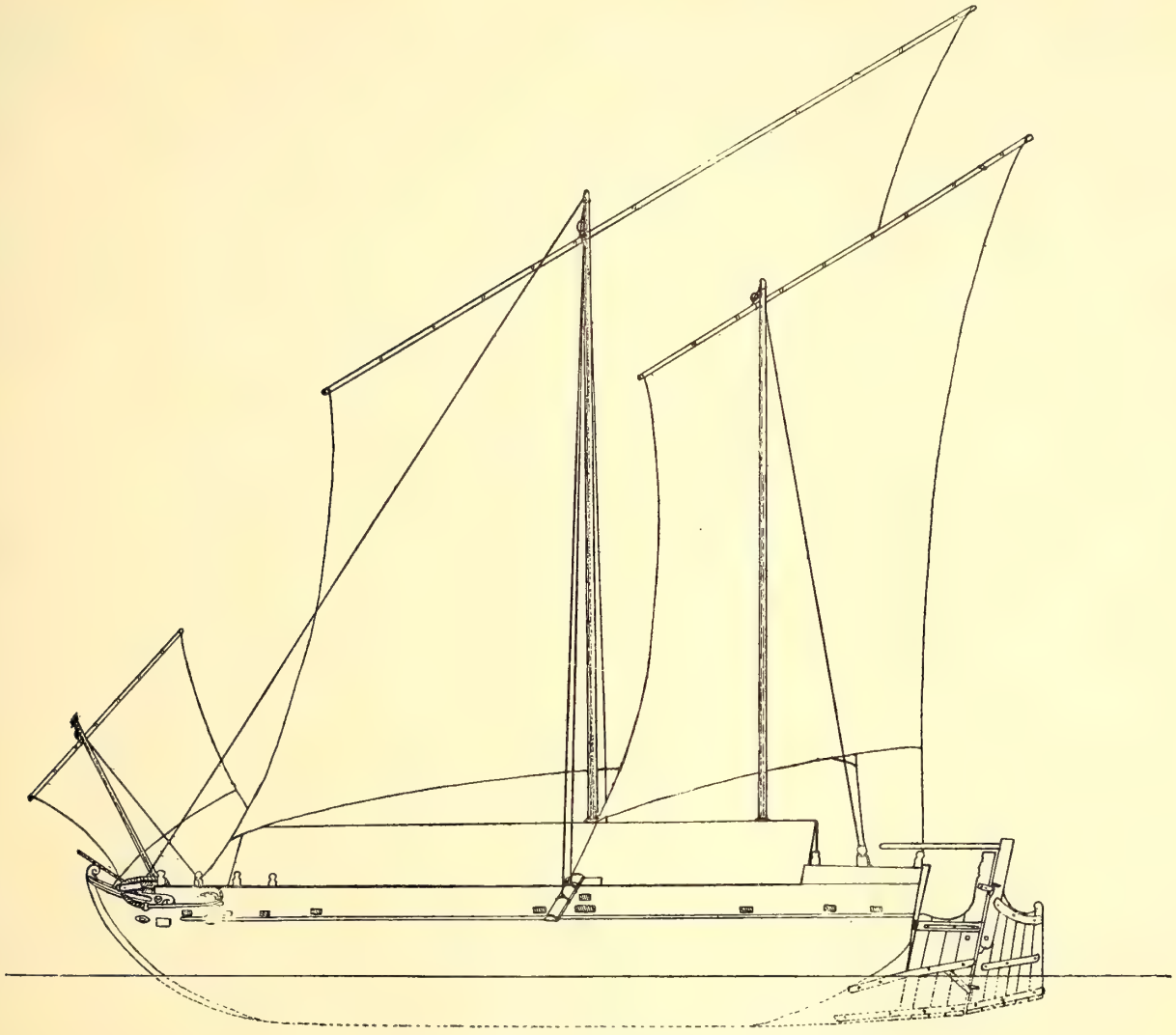

FIG. 12.—Kalla dhoni of Kodikarai, Point Calimere.

Some of the few remaining boats show a peculiar style of decoration such as is seen nowhere else in India. Upon the hull, which above the water-line is thickly coated with black pitch, a number of vertical white lines are spaced at intervals of about a foot apart, forming squarish compartments. In each of these, between the water-line and the gunwale the impression of a hand in white is seen. On the largest of these boats there were 25 of these hand impressions on each side. In addition, upon the transom stern a white disc occurs on the starboard side, a white crescent on the port—representations of the sun and moon. The owners who call themselves Kara-

thurai Vellalas claim to be a branch of the great Vellala caste with whom the custom is prevalent of marking their doors with hand impressions to avert the evil eye. Of still greater interest is the survival of an eye carved upon either bow, followed by a small square containing the name of the patron goddess of the owner—in the cases noted Amman—surmounted by the Hindus' propitiatory sign of உ, *părăvi* (பரவி) or "horse" being added—evidently an offering of the vessel to the goddess honoured as her horse or vehicle (text-fig. 13 and pl. vi, fig. 3). Be it noted that the only survivals of the use of "eyes" on the bows of sea-going boats in India and Ceylon are the present instance and that of the Jaffna dhonis of Ceylon. The pictures of a three-masted ship and of a Royal barge on the walls of the Ajunta caves (A.D. *circa* 600 A.D.)[1] show that this custom was in use formerly—probably habitual. The

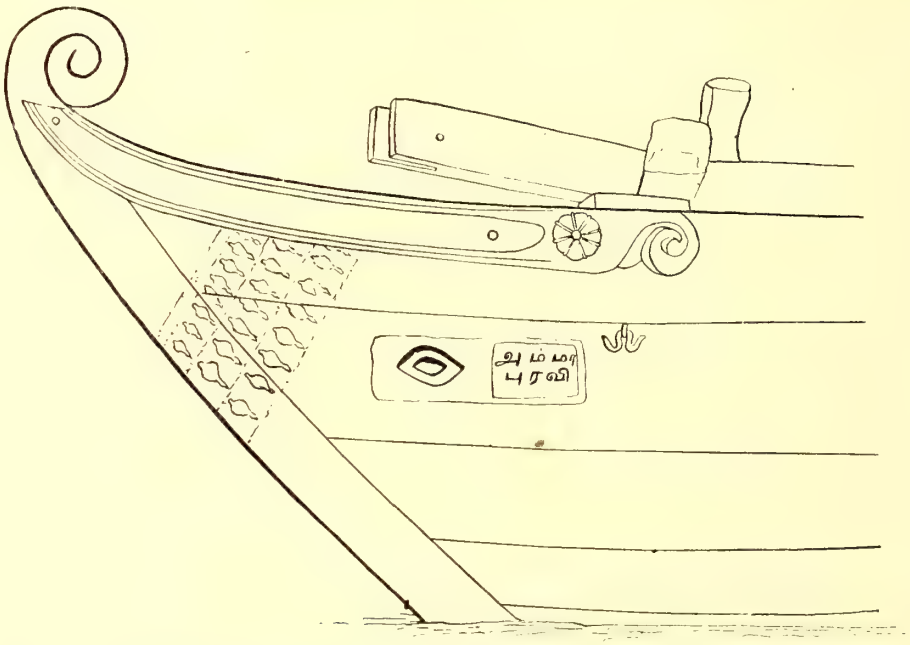

FIG. 13.—Kalla dhoni showing an oculus and inscription incised on the bow.

Greeks, Romans and ancient Egyptians followed the same custom, and although it has died out in India save at this out-of-the-world spot, it flourishes among the junks and sampans of China and Indo-China. The custom is not followed by the peoples of Malaysia—possibly because of Muhammadan influence.

Eyes are also fixed upon the bows of the small coasters of the dhoni type owned by Hindus in the north of Ceylon. In this case the wooden eye (pl. vi, fig.2) is carved separately and then nailed to the hull; in the Indian kalla dhoni it is carved in the planking of the bow. The Jaffnese Tamils, long isolated in the north of Ceylon, are noted as having retained many archaic Tamil customs long since lost by their continental kindred and as employing in ordinary speech a form of Tamil closely approaching the classical; the likelihood therefore is the greater that their local vessels retain more archaic characteristics than those of ports more open

[1] R. Mukerji, *Indian Shipping*, p. 41.

to outside influences. The same inference may be drawn regarding the Point Calimere *kalla dhonis* which are employed solely in traffic with the north of Ceylon. The latter also are manned by devout Hindu crews, who are accustomed to worship at the shrine of Mari Amman in Kodikarai after each voyage is safely accomplished.

In special danger or storm the seamen call upon her for help, shouting Amma !, Amma !, and vow offerings (of money) that they may reach shore in safety. Usually the money vowed is tied in a cloth and nailed to the mast then and there. A Brahman officiated in the temple as *pujari* at the time of my visit ; in the comparatively recent days when these dhonis were numerous, the Amman temple was accounted rich—so regular and continuous was the stream of offerings.

In the days when rail and steamer traffic had not bitten deeply into the coast trade, these kalla dhonis ran between Kodikarai and Kayts, the little deep-water port of Jaffna in Ceylon. As recently as 1886 they were busily employed in ferrying passengers and cattle across to Ceylon, and a writer describing the harbour of Kayts in that year ("Ceylon Literary Register," Vol. I, p. 24) records seeing about thirty of these boats moored alongshore.

They carried passengers for as little as 12 annas each, to and from Ceylon, a low rate that encouraged much coming and going, so much so that many Jaffna shopkeepers and tobacco growers living at Vedaranniyam, being able to pay week-end visits to their families in Ceylon, preferred to leave them there rather than transplant them to India. Were the present Ceylon quarantine restrictions to be removed, with the opening of the railway to Vedaranniyam, it is probable that this old and natural route for traffic between Ceylon and the Coromandel coast would revive and bring fresh prosperity to the neighbourhood of Point Calimere.

The East Coast.

Along the whole of the East Coast of India the true catamaran is the characteristic fishing craft. Except for the use of big sewn-plank boats used in shore seining and of various forms of backwater and river boats which ply in the estuaries and occasionally venture seawards, the catamaran is dominant the moment Cape Calimere is turned. The surf-beaten sandy coast line that runs with few interruptions from Tanjore to Orissa scarce knows any other sail but the brown triangle of these sea-going specialized rafts ; that their Tamil name, for once purely descriptive—*kathu maram* or "tied logs"—has become an English word bespeaks the uniqueness of their design. Our ancients, without previous experience of such weird craft, having no name whereby to speak of them, had perforce to use the native term and this has persisted, as the craft itself will persist for centuries to come as the only possible type for use on such an exposed and harbourless coast.

Two distinct types of catamaran exist, the finer and more elaborate model being found on the Coromandel coast, from Cape Calimere to the delta of the Kistna ; the other, more primitive and less efficient, along the coast further north.

The former type is the catamaran at its highest possible state of development—the furthest possible evolution of the raft idea that shares with the dug-out the honour

of being primitive man's earliest conception of a means to gratify ambition for a life afloat or, more prosaic, to enable him to cross a river in pursuit of his enemy or to steal away in flight.

But the Tamil sea fisherman has travelled far as a designer since those days, and to-day the fishermen of Madras and Pondicherry have more variations on the type, adapted for different methods of fishing, than can be seen in true boat designs in harbour at any English or Scots fishing port.

The general type consists of a variable number of definitely shaped logs of definite relative proportions, tied together raft-wise in a certain order recognised as

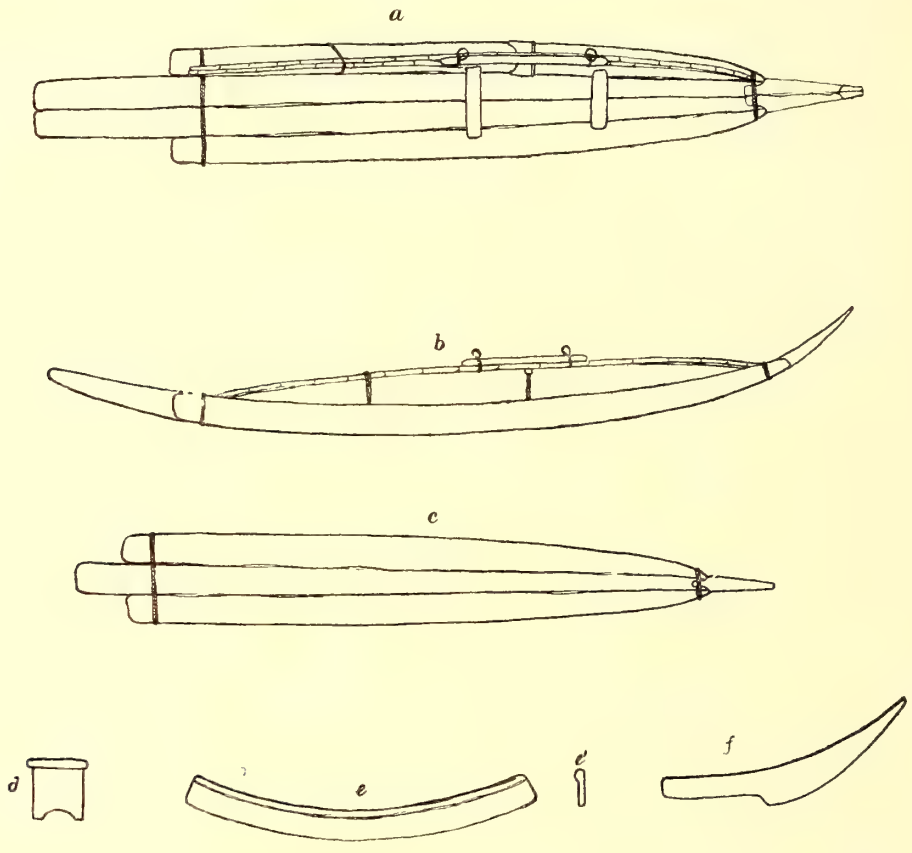

FIG. 14.—Madras catamarams. *a*, a Periya-maram from above; *b*, side view of same; *c*, a Chinna-maram; *d*, stretcher of rowing rail; *e*, paddle; *é*, section of same; *f*, a stem-piece.

correct by long-established usage. To these main elements are added a number of accessory pieces in the shape of stem points and sometimes a rowing-rail.

Catamaran being understood as a raft of logs, the inference is natural that it must be inherently clumsy in its form, broad and more or less formless. This is by no means the case with the Coromandel catamarans which possess very considerable elegance in their proportions and often show quite pretty curve lines. Figures 14 and 15 are witness to this.

The prettiest and best developed form is seen in the large *periya maram* form used in conjunction with the *thuri*, *edu* and *painthe valai* nets. This consists of four long,

and narrow logs carefully fitted together side by side and securely lashed in position fore and aft. The middle pair project aft about four feet beyond the outer logs, forming a conveniently narrow seat for the paddling steersman who kneels there squatting on *the soles of his feet*, the feet being stretched backwards straight out along the plank. At the fore end where the four planks end at the same level, the two outer ones are worked down laterally leading forwards and the end is then finished off in a sharp upwardly curved prow by the addition of two narrow wedge-shaped stem pieces. The total overall length is $25\frac{1}{2}$ feet with an extreme breadth of only $3\frac{1}{2}$ feet (fig. 14*a* and *b*).

The device to permit the catamaran to be rowed like a boat is most ingenious. Along the port side a rowing rail made of two bamboos is fixed in the following manner: the fore ends are inserted under the lashing around and securing the fore-ends of the logs, while the aft ends are secured loosely within a ring of rope passing also round the outer plank. To raise the bamboo rail to a proper height and maintain it there rigidly, a plank stretcher, 10 inches high by 8 inches wide, shaped on its lower edge to fit the curved contour of the catamaran log, is introduced and wedged upright (fig. 14*d*). A short length of stake to prevent the wearing through of the bamboo rail is lashed upon the latter and in this are two coir loops to take the rowing paddles. An ordinary crew consists of three men, but on occasion an extra man may be carried. In this case two *row* on the port side, one paddles forward on the starboard bow, and at the stern is the squatting steersman, plying his paddle right or left as required. The rowers have each a little transverse seat resting loose in a groove on the bottom of the catamaran.

When employed in working the thūri vălai, proper to this type of catamaran, a second and smaller canoe called *chinnă mărăm* (small logs) is required to assist (fig. 14*c*). This is of simpler design, consisting of 3 logs only and of one single beak-shape stem piece. The middle plank projects some foot and a half aft beyond the others. No rowing rail is present. The overall length is 21 feet, the width 2 feet 4 inches. The crew consists of two men.

When there is a favourable wind going to or returning from the fishing ground, the larger of the pair of thuri valai catamarans puts up a small lateen sail rigged in the manner already described as used in the boat catamarans of Cape Comorin. As with the latter, the smaller of the pair ties up alongside the larger one which alone carries mast and sail.

For drift net fishing the *irukka maram* variety is chiefly employed (fig. 15). This is very similar to the *periya maram* but consists of five logs instead of four, the middle or odd log being the longest, projecting aft some distance beyond the inner lateral ones which in turn project beyond the outer lateral pair. The stern ends therefore in a series of steps. The beaked prow is formed of three stem pieces whereon is hooked a single-fluke wooden anchor with stone-weighed shank. A rowing rail is present and mast and sail of the usual type are fitted. This variety is used singly and not in pairs or double pairs as in thuri valai and edu valai fishing.

A simpler and shorter form constructed of five logs unprovided with any beaked

prow and equally without sail and rowing rail is used in line-fishing and hence is called *thundil-maram* or "hook-catamaran" (fig. 16).

Last to be mentioned is the great *kolamaram* of "flying-fish catamaran," in some ways the variety of greatest interest. It is the largest form of catamaran used on the Coromandel coast, where it is found chiefly along the shore-line of the Tanjore district. Only used during the clear-water season of July and August, it is more of the primitive raft and less of the carefully designed sea-craft than any of the beaked forms above described. To construct one a couple or even three periya marams or erukka valai marams are untied and (usually) seven of the longest logs are selected and tied side by side, rigidity being obtained by lashing two cross poles over each end. A stem is formed as in the periya maram and other forms by lashing five stem pieces at the fore end. Two short masts each hoisting the usual triangular catamaran sail, are stepped in holes in the outside log of whichever side happens to be leeward, one forward, the other two-thirds aft, and with

FIG. 15.—An Irukka-maram, Madras.

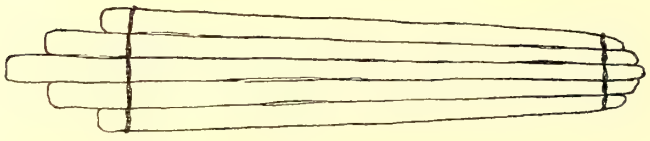

FIG. 16.—A Thundil-maram, Madras.

sails hoisted, this queer craft, manned by seven men, boldly not to say rashly ventures out of sight of land, heading for the *kala pani* outside of the 100-fathom line, where alone can shoals of flying-fish be found. The amount of food and water taken is exceedingly limited and if the shoals are not found within the first day, the men have no option but to turn and set a course for home. Sometimes they make such an amount of leeway in spite of the use of two large leeboards that they fetch the coast 20, 30 and even 50 miles to the north of their port of departure, and if they happen to have a haul of fish aboard, its condition is then fit only for manure. But the profits often bring a great recompense and a fisherman learns to take such risks.

North of the Kistna and Godavari deltas and employed almost entirely by Telugu fishermen, a more primitive and simpler form of catamaran is in use than satisfies the Tamil fishers of the Coromandel Coast. On the shores of Ganjam, it consists essentially of five logs brought to a narrowed point at the forward end, where two accessory stem pieces being added give a sharp beak point as in the

best Tamil types (fig. 17). Aft, the craft is abruptly truncated, the logs being cut off at the same level. Instead of being lashed together with rope, the logs are pegged together permanently, the comparatively small size of the craft permitting the crew to carry it up the beach without separation of the logs. The three median logs usually are the only full length pieces used, the side ones being made of pieces of old logs pegged on to give the required curve to the side. Upon each of the side logs a deep weather-board set on edge is fixed, to give some slight protection to the crew and their gear. The fore end of each board butts against the aft end of the stem piece of its own side, giving a clear run fore and aft. Further south, on the coast of Vizagapatam, the size is larger and the workmanship and quality of the timber distinctly superior. In the peculiar craft of this region, called *teppu* in Telugu, we find a stage intermediate between the Coromandel or Tamil catamarans

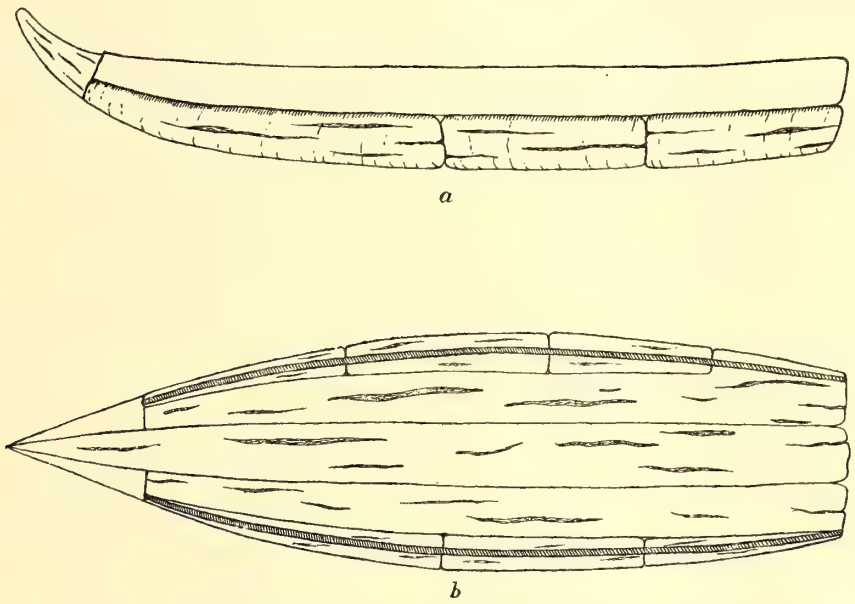

FIG. 17.—A catamaran from the Ganjam coast.
a. side view to show weather-board.
b. view from above.

and the pegged-together catamaran rafts of Ganjam. Here the hull consists of two halves lashed together fore and aft when in use. Each half consists of a long log bearing a washboard sewn on upon the outer edge, and with a pointed beak-piece pegged upon the fore end. On coming ashore the rope lashings are cast off, whereupon the two halves fall apart, for ease in carrying up the beach. In the largest sizes, a median log is added to give greater beam. This is held in position by means of the fore and aft lashings when in use; in such, the catamaran falls into three main pieces when unlashed. The median log has also a pointed bow piece, but this is loose and not pegged on as is the case with those of the lateral sections. A small loose rudder is used when sailing, let down aft between the ends of the main logs. Two men form the usual crew of one of these craft.

Alongside of the catamaran is the so-called masula boat of Europeans, but

known as *padagu* or *salangu* among Coromandel fishermen, a large and clumsy open boat used in shooting shore seines, and also as a cargo lighter. Its range extends along the whole of the East Coast northwards of Cape Calimere. On the Coromandel Coast it is distinctly short in proportion to its length and depth, a rather small one measured at Pondicherry being 28 feet long, 8 feet beam and 4 feet deep. In the Vizagapatam and Godavari districts it often runs longer and more elegant, frequently ranging to 40 feet and even upwards in length, with beam and depth about the same as in the southern districts. As the masula boat never goes far from shore, mast and sail are not used; a crew varying from 8 to 12 in number perched insecurely on thwarts far forward, provide the motive power with long paddle-sweeps not less than 12 feet in length; steering is done with a very long and powerful paddle suspended in a coir grommet from the projecting head of the stern post.

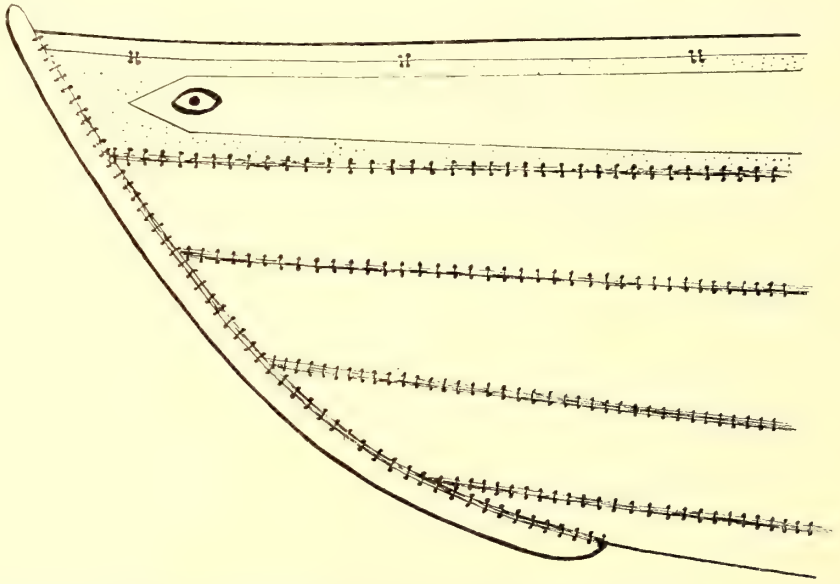

FIG. 18.—Fore end of a Madras masula boat, showing the method of stitching together the planks; also an oculus painted close to the stem.

No iron is used in the hull, the planking being sewn in the usual surf-boat fashion already described in the case of the Ceylon outrigger coaster. A narrow keel projecting about 2 inches is usually seen, no bulk heads are used, stem and stern are both raked considerably and both are somewhat buff in their curves. Freeboard has to be very high as they have to pass through heavy breakers and in consequence the loads they carry are very light compared with their apparent capacity.

An oculus is sometimes (rarely) painted on the bows at Madras (fig. 18).

In the seining masulas working in the neighbourhood of Uppada, Vizagapatam district, this type of boat attains its greatest development, both in regard to size and economic importance. There it is esteemed the most valuable asset of fishermen as these men have vigorously developed the use of the shore seine and without roomy boats would be unable to carry and handle the great length of net requisite to effective operations on a large scale.

These Vizagapatam fishing masulas are usually decorated along the sides with two rows of sloped panels of alternate black and white, those of the upper row slanting opposite to the inclination of the lower ones (fig. 19).

The delta of the Godavari furnishes a notable exception to the universality of the catamaran and the masula boat upon the East Coast. In the seaward creeks of this great river a host of peculiar fishing craft, called shoe-dhonis among Europeans, ply their trade. The name well describes their appearance—wide and flat

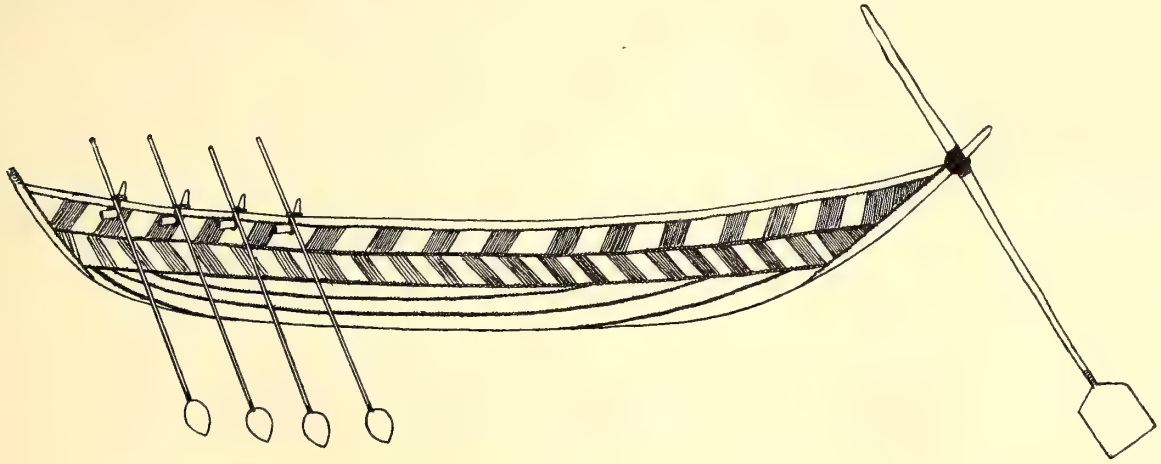

FIG. 19.—A large seining masula boat, Uppada, Vizagapatam.

forward with a sharp stem, they narrow greatly aft and have a square transom stern (fig. 20). The fore part is decked in, and as the aft portion, roughly two-thirds of the length, has tumble-home sides, and is also decked in for three feet from the stern, the well is narrow and restricted. It is protected by a high transverse coaming where it meets the fore-deck. The steersman squats on the little deck aft and steers by means of an oar about 12 feet in length working in a wooden rowlock nailed to the centre of the stern. This oar is also used in skulling when there is

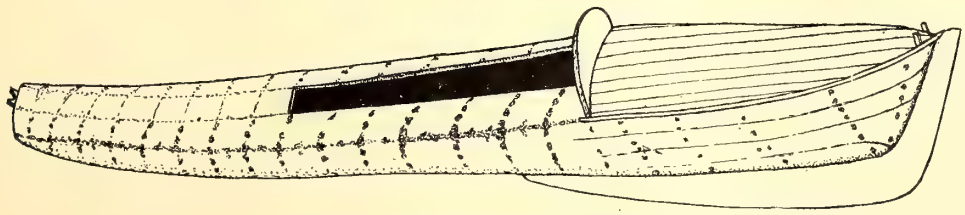

FIG. 20.—Shoe-dhoni, Cocanada

no wind. The hull has a deep forefoot merging into a fin-keel 6 to 8 inches deep beneath the mast; the aft portion is nearly flat bottomed, and has almost identical lines as the same part in a skimming hydroplane. Narrow teak planks are generally used for the hull, nailed on ribs of any sort of wood. The outside is kept liberally coated with tar and not with fish oil as in Malabar. The forward decked part is considerably wider than the aft, usually by a foot; in one measured dimensions were as under:—

	Ft.	in.
Overall length	26	0
Forepart, bow to aft side of coaming	8	6
Beam at fore side of mast (at coaming)	3	7
Beam aft of mast	2	8
Depth	2	0

A rather lofty square sail hung from a bamboo yard is used, hoisted to the head of a 19-foot mast set upright immediately abaft the transverse coaming. Its head measures 10½ feet, the luff 14½ feet and the foot 10 feet.

This shoe-dhoni of the Godaveri creeks is perhaps even more distinctly indigenous to India than the catamaran. The form of the shoe-dhoni is quite unique so far as I know among boats, and is especially interesting as I believe I am able to indicate its prototype for the first time in the curious palmyra-palm dug-out

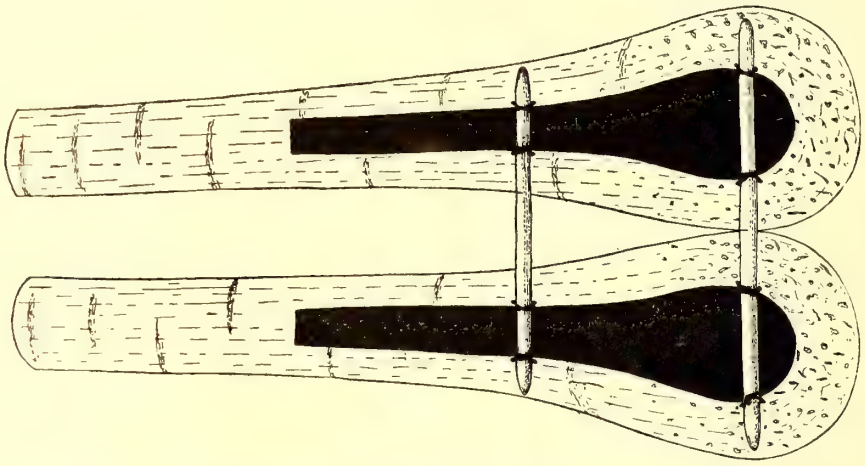

FIG. 21.—A sangādam or double canoe, Godaveri river.

used on the upper reaches of the same river system. These craft frequently used as double canoes, consist of two butt sections of palms roughly hollowed out on one side and lashed together parallel but at some distance apart by means of two bamboo poles passing from one to the other (fig. 21). The butt end of each dug-out being bulbous, one extremity is wide, whereas the other is narrow and truncated as being part of the cylindrical stem. One of these dug-outs copied in planks and with a keel added below the fore end which corresponds to the bulbous butt, gives precisely the design of the shoe-dhoni. As further proving the inland origin of the latter, we have to note its tall mast and high and narrow square-sail, well adapted to top the low banks of river and creek but a poor design for sea-going craft.

These boats are absolutely local, not being found even in the adjacent delta of the Kistna. They are very fast with a fair wind, but are said to be poor sailers when beating in spite of the deep fin-keel and forefoot, a fault due apparently to the type of sail employed.

BACKWATER BOATS.

Backwater boats on the East Coast are generally either dug-out canoes, or rough and usually clinker-built reproductions of that form. The latter are the craft generally used on Pulicat Lake and the Madras backwaters for fishing. The clinker-build is noteworthy as I am not aware of this style being employed anywhere else in India. Iron nails clinched upon iron washers are used for fastening the planks together. These boats remain naked of paint or of oil dressing all their life, so the majority always appear untidy and broken-down. For cargo carrying on the coast canals large undecked barges running to 20 tons' burden are numerous. They are broad and flat bottomed and of 3 to $3\frac{1}{2}$ breadths to length. They are built in the same manner and on the same lines as the fishing boats but with a strongly marked "swim-bow" such as Dutch eelers affect. It is simply a punt bow ending roundly instead of being truncated. The stern is shaped similarly, so, to support the rudder properly, a strong heel has to be run out from the bottom of the boat to support the vertical stern post. These canal boats frequently carry a coach roofing over nearly their whole length, supported on uprights set along the gunwale. The rig is a light cotton sprit-sail triced high up and carried on a fairly lofty spar stepped in a tabernacle above the deckhouse roof. Karimanal at the south end of Pulicat Lake is one of the chief places where these canal boats are built. For convenience, they are constructed upside down and a preliminary to launching is the turning of them right side up !

A considerable number of the Chilka Lake fishing boats are notably larger than those in use on Pulicat Lake; they are simply planked-up boats of canoe model, and are of no special importance in design.

Far otherwise is the novel rig of some of the smaller craft that ply on this greatest of Indian backwaters. Alone of any of the craft we have noticed above, two masts are here used, slender bamboos set up parallel on either gunwale well in the bows. A short stay runs from each to the bow, while another runs from each masthead to the stern. On the masts is fastened a narrow oblong strip of matting as a sail. To give strength numerous transverse battens are fastened at short intervals No mechanism exists to hoist the sail which has to be bound to the masts before being set. (Pl. V, fig. 5).

The idea is probably borrowed from Burma, where a double mast is customary on the big river rice-carrier which is one of the biggest and smartest forms of river-boat in the world. In the Burmese boats the two spars are however not fitted parallel but meet at the apex in a manner seen in Egyptian drawings of the third and fourth dynasties.[1]

Primitive catamarans made up of any old logs roughly tied together are fairly extensively used by cast-net fishermen on backwaters, particularly in the Tamil districts; the logs are usually old ones thrown out of use by sea-fishermen.

Dug-out canoes of the ordinary kind are not greatly in evidence on the Coromandel

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[1] Holmes, G. C. V., *Ancient and Modern Ships*, London, 1900.

Coast backwaters as they are difficult and expensive to obtain. In Vizagapatam district I have seen two or three of the clipper form of dug-outs used in Burma; these were spoils of the sea, brought by the drift which sets across from Burma during the north-east monsoon; a similar one I saw recently at Muthupet on Palk Strait.

For a long time I believed the outrigger canoe to be unknown to the north of Point Calimere; quite recently I found them numerous on a backwater near Cuddalore, where at one place fifteen were seen together; they are also reported as numerous on the Vellar River near Porto Novo. Each is formed of a small dug-out, usually about 16 feet long by 22 inches broad, furnished with an outrigger float of ordinary form boomed out by means of two poles, at a distance of 5 feet from the canoe. They are used generally in conjunction with the casting net; mast and sail are never fitted. This extension in the range of the outrigger is particularly interesting, as we now find it in use at intervals along the coast line lying between Baluchistan in the north-west to a point well north on the Coromandel Coast in the south-east. A small one is also often carried as a ship's dinghy by the coasting dhonis sailing out of the northern ports of Ceylon (text-fig. 5).

Sea-going Ships on the East Coast.

Of ships in contradistinction to boats properly so-called many fine examples running from 50 to 300 tons' register were engaged in the Indian coasting trade a few years ago. The baggala and pattamar are run so cheaply that true ships were never able to compete with them on the West Coast. In the Bay of Bengal this competition was not severe, and as there has always been much carrying trade between Bengal and Burma on the one hand and the South Indian and Ceylon ports on the other, a fine fleet of brigs, barques and dhonis found these remunerative runs till the regularity and insurance advantages of steam traffic ran the slow and irregular sailers almost off the sea. Coringa near Cocanada, and Masulipatam, the ancient eastern sea-gate of the Deccan, were the most famous of the old Indian ship-building ports. Some of the small ports on the north of Ceylon, notably Valaveddithurai, and others on the Ramnad coast, also turned out a fair number of medium and small craft, chiefly however of the dhoni class. Even to-day all these ports do a certain amount of shipbuilding, but the number and average size have become reduced, not on account of lack of skill on the part of the present-day designer and workpeople but solely owing to the difficulty which owners experience in earning remunerative freights with large tonnage sailing vessels, part of the handicap lying in the difficulty of effecting insurance upon cargo carried in native craft.

In the designs of the larger of these craft, European influence has been paramount during the last three hundred years; the models on which the Coringa and Masulipatam builders founded their designs were chiefly the splendid vessels of John Company and the grand products of the eighteenth century French naval shipyards, refined during the past century by the influence of the clipper design that brought sailing ship construction as nearly to perfection as it seems possible to attain. The favourite rigs with Indian builders and shipmasters were those of

the barque, the brig, and the topsail schooner. Even to-day East Coast harbours often contain a goodly collection of wooden brigs and schooners with here and there a barque with high poop and painted imitation gun-ports, that are wholly European of the early nineteenth century in appearance. Of Portuguese influence the larger three-masted Maldivian trader seems the only instance but a most interesting one, as it reproduces for us almost all the outstanding features of the fifteenth century caravels used by Columbus. The Dutch in spite of their skill in ship-building and first-class seamanship appear to have left no trace on Indian ship-designing. Probably both they and the Portuguese did exercise a great deal of influence on design in their day, this being lost or overlaid by British and French design as these powers displaced their predecessors.

Of modern European influence upon boat designing scarcely a trace exists, except in the isolated case of the Pamban dhoni, a transom or square-sterned lugger used largely in ferrying pilgrims to and from Rameswaram island in the pre-viaduct days.

The small coaster class built in the north of Ceylon, generally called Jaffna dhonis, are weatherly vessels running to 150 tons' burden, and deserve particular notice from the many archaic features surviving in their build. Technically known in Tamil as *padagu*, they hail mostly from the little port of Valaveddithurai. The majority are owned and manned by more than usually devout Hindus, the remainder by Muhammadans (Labbais).

Their rig is that of a fore and aft two-masted schooner with enormously developed bowsprit and head sails. Primarily the rig is European—almost the only foreign point about these boats, but in process of adoption the number of head sails has been increased beyond anything seen elsewhere, as many as five jibs being in regular use. Stem and stern are sharp and somewhat raked; the former ends in an inwardly coiled ornamental head in Hindu dhonis, called *surul* (சுறுள்), the bowsprit being placed on the starboard side. In Moslem ships, no *surul* is seen, the stem passing forwards to give support to the bowsprit, which here is placed in the median line.

The *surul* in Hindu padagus bears three horizontal white bars painted on the aft edge (Pl. VI, fig. 1); these represent the three ash lines used by Saivite Hindus as their sect mark and the sign of their god. In these boats it has the same significance. Beneath it in a tiny recess in the bows is the little shrine of the god, before which one of the crew, who acts as *pujari*, with the aid of an assistant performs worship daily and in particular before leaving port. On a shelf in the recess a blowing conch and other items of the ceremony are usally kept. In the ritual followed, a lamp is kept alight on the shelf, incense is burned, the conch is blown, a bell rung, a coconut broken, libation made, and plantains and betel offered to the god.

Fore and aft is a short deck ending in each case in a high transverse breakwater, $2\frac{1}{2}$ to 3 feet in height, sloping towards amidships. The waist between is undecked, but is covered in by a penthouse roofing of palm leaves overlaid and strengthened

by closely set palmyra reepers tied down with coir. The aft deck is the larger; on it a small cooking galley and several water barrels find accommodation. In the centre is a small hatchway. There is no poop, the gunwale having a clear run fore and aft. As ship's boats, a small outrigger canoe and a fair-sized catamaran are carried, both useful types for a small coaster with restricted deck accommodation, as they can be taken to pieces and stowed away without difficulty.

As in the Laccadive boats, the hull, here also usually painted, pitched or tarred black, is ornamented with two parallel white lines. In the dhonis the lines are equibroad; at the rise of each bow, they are bent abruptly downwards and pass to the stempost in such a way as to leave a triangular patch of black beneath the coiled prow or *surul*. In the angle or elbow of the two white bands is nailed on a carefully carved ornament in the likeness of a human eye, pupil and eyelids well defined by being picked out in black and white—the eye of the god who has his shrine within the bows. With these eyes, the tindal stated that his ship would be able to avoid danger—without them she would be like a blind man blundering into danger with every step he takes. (Pl. VI, fig. 2).

The dimensions of a typical Ceylon *padagu* from Valaveddithurai are as follows:—

Length between perpendiculars	100 feet.
Beam	21 ft. 2 in.
Depth from keel to top of gunwale	14 feet.
Tonnage	144 tons.

Muhammadan padagus are similar in all respects save in having no curved prow and having no eyes on the bows.

The Sinhalese outrigger coaster or *yathra oruwa* (*yathra dhoni*, Tamil), hailing from the south-west coast of Ceylon, which, on account of its size, requires mention here, has already been described. In many points—the two pole masts carried, the sharp ends, the palm leaf or bamboo penthouse roof in place of a deck and other details—it shows a great family resemblance to the padagu; probably this Sinhalese type is the original of the latter, the great outrigger having been eliminated by the northerners as they passed the unskilful and timid stage of long voyage coasting wherein the Sinhalese still remain.

The Maldive Islands.

No people of the Indian Ocean are the superior of the Maldivians as boat-builders, fishermen, and sailors, though for neatness of finish and beauty of line of their smaller craft, the neighbouring Laccadive islanders excel them.

For shore work the Maldivians formerly relied largely upon outrigger canoes and boats, but these are seldom seen now-a-days, handsome little beamy skiffs having largely replaced them. Alike with all those of the Indian mainland, the Maldivian outriggers have the booms connected directly with the float; all are of the single type.

The most numerous craft in these islands are bonito-fishing boats (fig. 22). These are very handsome and wonderfully speedy boats showing, in the type used at Minicoy,

a curious combination of fore and aft and square sails. These boats are of light draft in order to pass through the shoal passages in the encircling reef into the safety of the lagoon. The forward end rises easily and gracefully to a moderate extent, ending in a slender upturned prow; the stern is low and rather full to provide the better for a large platform not only decking in the extreme aft portion but projecting outboard to a considerable degree. A single tall mast with little or no rake is stepped slightly forward of amidships in a simple tabernacle, and when lowered rests on the hollowed-out top of a broad plank set upright on the aft platform to act as a crutch. The rig is peculiarly hermaphrodite, there being a high mat square sail hoisted on the

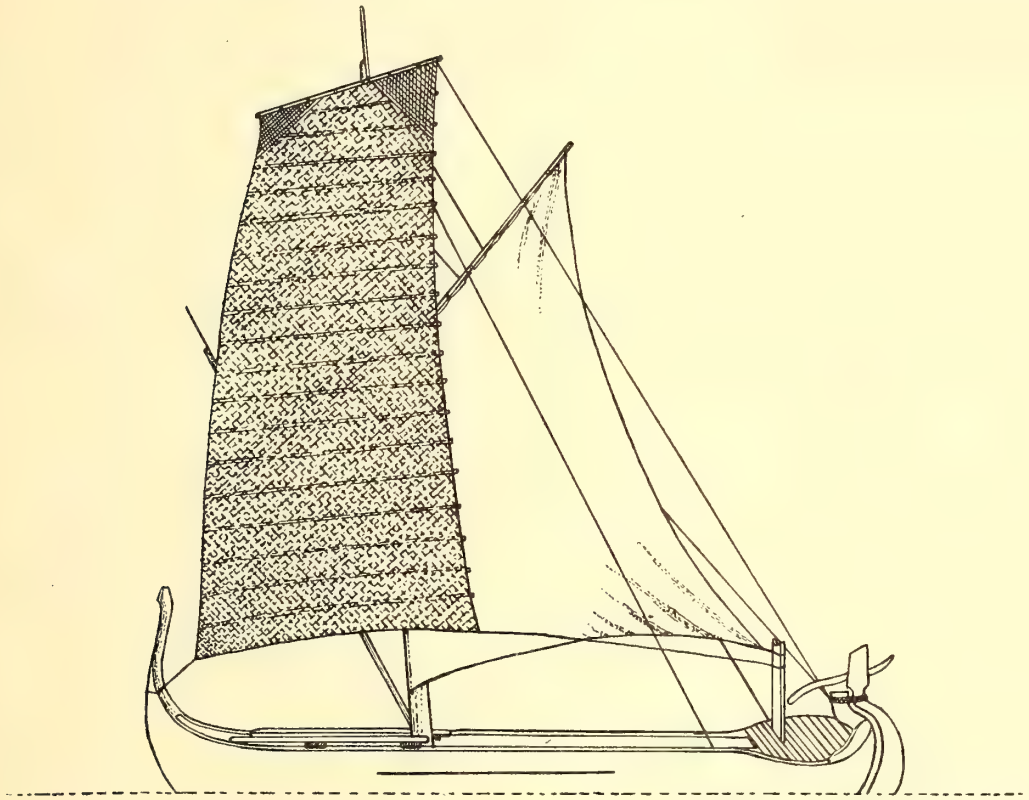

FIG. 22.—A bonito fishing-boat, Minicoy Island.

foreside of the mast while abaft on the same spar is set a fore and aft thin cotton main sail.

The object of the stern platform is not to give a commanding seat to the steersman but is primarily built to afford standing room for the crew to jig for bonito when they get among a shoal of these fishes. The hull is open save for this fishing platform and is divided by numerous bulkheads, as some of the compartments function as wells for the live-bait carried.

A somewhat similar boat, of larger dimensions, especially as regards beam and depth, is used in traffic between the islands and Ceylon; it is usually decked over with somewhat elaborate and comfortably arranged deck-houses in the better class, while in others these structures are largely replaced by well-built cadjan penthouse

covers, efficiently protecting the cargo. These boats dispense with the fore and aft gaff sail used by the Minicoy bonito boats, but often add a small topsail in fine weather. They have speed and power and form a fine class of sea-boat. Formerly the smaller Maldivian boats of this description running to Ceylon employed an outrigger to give additional stability. The present build is more beamy and deeper and the crew find they can now safely dispense with this clumsy contrivance.

For many years the Maldivians have maintained regular trade with Chittagong and other far-off ports, by means of large traders running to one hundred tons or more in size. These vessels are very remarkable as they perpetuate, in their main features, the characteristics of the Portuguese and Spanish caravels employed by Columbus and Vasco da Gama and the conquistadores who followed in their footsteps at the beginning of the sixteenth century. These Maldivian traders are fully decked with considerable deck houses aft and amidships and a big overhanging forecastle carrying a short foremast raking forwards, hoisting a square foresail well over the bows. The rest of the rig consists of a tall mainmast and fair-sized mizzen; the former carries a big main square sail set high up with topsail and occasional small topgallant sail, while the latter is rigged with a fore and aft gaff sail. In the last detail we have a departure from the lateen mizzen of the fifteenth century ship. The Maldivian design has also dispensed with the lofty poop and transom stern so characteristic of mediaeval ships.

Laccadive Islands.

The sailing craft of the Laccadives lack the diversity of form seen in the sister isles to the south. The islanders are of a different race and are home-keeping people with a narrower outlook in life, to whom a voyage to the adjacent mainland, to Calicut or Mangalore, to carry their simple island produce of tiny coconuts and amber-coloured coir fibre, with sometimes a little sun-dried fish, is the limit of their world travel. They have no elegant bonito boats, and no three-masted traders, notably no outrigger boats. They have one type alone, but that a most handsome one. It is a little lateen-rigged modification of the type of Indian pattamar, combining the simple bow of the southern type with the lofty highly ornamented poop of the northern or kotia design. The lines are particularly sweet, sweeping forwards in graceful curves to the overhanging bow, ending in a curious upright stem piece carried in the same way as the more elaborate ornament on the prow of a Venetian gondola.

The poop cabin is large and roomy with a curious stern gallery built out aft and on the quarters exactly as in many of our present-day naval vessels. The hull is painted or rather tarred black, relieved by two fore and aft white bands, the upper wide, the lower narrow. The sides of the lofty poop and of the stern gallery are decorated with elegant arabesques in white, usually in panels with ornamental borders. No two pattamars are decorated alike; the designs vary greatly and bespeak a strong innate artistic sense in the islanders. The hulls of these boats are put together entirely without nails, the planks being sewn together along the edges with coir twine,

a device alike economical and of practical value in imparting elasticity invaluable to boats always liable to ground when entering the shoal entrances of the home lagoons.

The rig is a single medium-sized lateen sail carried on a stout mast well raked forwards; sometimes a small mizzen, also lateen rigged, is added.

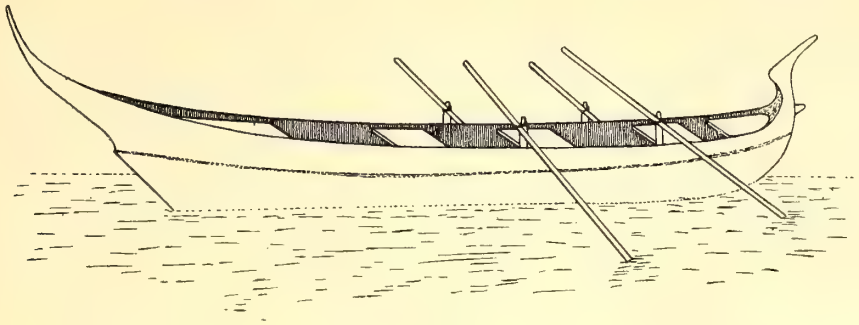

FIG. 23.—A reef-boat, Laccadive Islands.

The island fishing boats and skiffs are built on the same general model save that the stern is generally rather low; the bow has often an exaggerated rise terminating in a high upturned pointed beak (fig. 23).

THE ANDAMAN ISLANDS.

In this group, thinly inhabited by wild Negrito tribes who are usually accounted the very lowest in civilization of all existing races of the human species, it is surprising to find these people habitually employing both the primitive dugout and a well-designed single outrigger canoe.

The simple dug-out is the type adopted for their larger-sized canoes; the outriggers have normally smaller hulls fashioned on identical lines. The shape of the dugout both when used alone and as the hull of an outrigger canoe is peculiar; it is absolutely distinct from all Indian peninsular types, approximating closely to the Australian type; instead of the sharp ends invariably favoured among the former, those of Andaman canoes are rounded, and the bow is prolonged horizontally forwards to form a overhanging shelf or platform to give footing for the harpooner on the look-out for turtle and great fish; at the stern a corresponding but much reduced projection is present. This form is distinctly primitive, characteristic of people still in the crude hunter-stage when reliance is placed solely or mainly upon barbed lances and harpoons and not upon nets for the capture of food from the sea.

The outrigger frame is invariably single; the float is connected with the hull by multiple booms varying in number according to the size of the dugout—never less than three nor more than twelve as an extreme maximum. The booms are slender poles secured at their inner ends by being passed through holes in the sides of the dugout close to the edge—a most peculiar method seen nowhere else in India but found either exactly similar or in some variant form in the outriggers, both single and double, of North Queensland, Australia.

The connection effected between the float and each boom is indirect, by means of three short stanchions; these are inserted in line longitudinally upon the upper surface of the float. The middle stanchion is vertical, its upper end lashed to one side of the extremity of the boom; the outer ones converge, their upper ends passing *beneath* the end of the boom, lashed thereto with rattan on each side of their vertical companion. The upper ends project irregularly beyond the upper surface of the boom. This method of connection again shows close relationship with that characteristic of certain Australian outriggers, differing however in the number of stanchions employed. In the Queensland form from Cape Bedford and neighbourhood, two only are used, the median or vertical one being omitted.[1] In this type a wholly unusual modification of the boom fitting is found, two twin slender rods being used therefor, the outer end of one being inserted over, and that of the other under, the crossing of the two stanchions. No vestige or suggestion of this modification is seen in the Andamans, but with the exception of this and the addition of a vertical (third) stanchion, the Andaman outriggers show such close resemblance in all details to the typical Queensland form, that it is obvious they have had a common origin. In both, (*a*) the canoe form is the same, both have the same lack of sheer, the same rounded ends and bow platform; (*b*) they agree in having multiple booms of no fixed number—the Andamanese cannot count beyond three—and (*c*) in the booms passing through the sides of the canoe; (*d*) the float connection though differing in one detail, is essentially of the same type. Only in the use of twin slender boom poles by the Australian type in place of a single stout boom is there any marked difference between the two. Were the points of similarity confined to one or even two important structures, one might consider them as coincidences or as a case of convergence brought about by like needs, like habits and similar environment; when the coincident structures comprise all those of importance, the evidence becomes cumulative and we cannot accept the view of independent origin—both canoes must have had a common ancestry.

It is difficult to avoid the conclusion that to the Negritoes, low in civilization though they be, the invention of one form of the outrigger canoe is to be traced, and that the nearest approach to the original design is that existing still in the Andamans. From the Negritoes the Australians appear to have borrowed this design, without ability to improve upon it. As this primitive form is of the single outrigger type, we may conclude that the single antedated the double outrigger: the evidence of Polynesia tends to the same conclusion.[2]

NICOBAR ISLANDS.

Although situated at no great distance, scarcely ninety miles from the Andamans, and although the single outrigger canoe is again the characteristic boat form,

[1] Haddon, A. C. "The outrigger Canoes of Torres Straits and North Queensland" in *Essays and Studies presented to W. Ridgeway*, Cambridge, 1913.

[2] I am indebted to the Chief Commissioner of the Andamans for kindly supplying the details of Andaman canoes given above; these may therefore be taken as accurate. A good figure of an Andaman outrigger with four booms is given

the Nicobar Islands design is radically different from that of the sister group. The outriggers found here are better built and more elegant in form and never possess more than two booms. Instead of the crudely fashioned hull without sheer prevalent in the Andamans, we find the Nicobarese bestowing considerable care and taste upon the lines and decoration of their canoes; the bow is carried high in a graceful curve to terminate in an extremely long-drawn-out prow ornament adorned with a stiff flag at the apex, while the stern is produced considerably in an acuminate projection inclined slightly upwards. "The hull is charred and decorated by grooved bands running at short intervals from gunwale to gunwale round the outside. These canoes are fitted according to size, with from one to four short bamboo masts, each supported by four widespreading stays of rattan, and on these are hoisted lateen sails with a short tack of about 12 inches, made of cotton or pandanus leaves. The masts are never stepped on the floor of the canoe, but always on one of the crossbars or thwarts." [1]

In the case of the largest three-masted canoes, the fore mast is placed in the bows, and well forward of the fore outrigger boom; the main and mizzen masts are stepped between the two booms, the mizzen just forward of the aft boom. All the masts are vertical and short, the main being a little longer than the others. The yards are longer than the masts.

The chief peculiarity of these canoes is in the form of the outrigger. The booms are invariably two in number lashed above the gunwales at their inner ends, each being connected with the long float by means of three pairs of divergent stanchions crossing *beneath* the boom. The fore pair of stanchions slope outwards and backwards; the mid pair away from one another, while the aft pair pass outwards and forwards. The upper extremities of the stanchions project conspicuously above the boom, the length being often nearly equal to that between the boom and the float. The stanchions are rod-shaped, the lower ends pointed and inserted in holes in the float without lashing. The upper ends are lashed with rattan to the boom.

The differences between the Nicobar and Andaman outrigger designs are so great and fundamental that it is impossible for one to be derived from the other. Discussion of this question and of the respective origins of both must however be postponed to a later page.

River Craft.

In the general types of river craft seen in India, much less ingenuity is shown in evolving designs for local needs, and correspondingly clearer and more primitive are their relationships to types known in the ancient world. The simplest and quaintest are the plantain-stem catamaran of Tanjore and Bengal, the chatty-raft of South India, the round coracle of the Cauveri and Tungabhadra and the double palm dugout of the Godavari.

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by Mouat in his *Adventures and Researches among the Andaman Islanders*, 1863, while a model, agreeing in all essential particulars but furnished with eight booms, finds a place in the Ethnological collection of the Indian Museum, Calcutta.

[1] Kloss, C. B., *In the Andamans and Nicobars*, London, 1903, page 79. In this work an excellent illustration of a Nicobar outrigger canoe is given.

The first of these is probably the most primitive form of river craft evolved by prehistoric man. In the form seen alike in Tanjore and in Bengal where plantain (banana) stems are valueless as soon as the fruiting age is passed, it consists of 5 or 6 of these stems roughly trimmed at the ends and fastened together raftwise by a skewer of wood or thin stake passed through the series from side to side at each end. Banana leaf-stalks, whereof these "stems" are really made up, are full of tiny cubical air spaces and these give quite a considerable flotation value to the structure. It is the expedient of the moment—the simplest form of raft that will serve an emergency—a thing to be cast aside almost as soon as used.

The chatty-raft, while equally primitive, is still more ingenious. As seen at Vellore, it consists of two ordinary earthenware pots (chatties) turned upside down and connected tandem fashion by means of a stick lashed on each side of their necks. A space of some two feet is left between the pots and on this fragile frame a man can sit astride when the strange contrivance is "launched" into the water. At Vellore Fort this raft is used in order to reach the water-lilies which abound in the deeper parts of the moat; the leaves are collected to serve as platters.

The coracle such as we see to-day in use on the Cauveri and the Tungabhadra, on the Tigris and Euphrates, marked a great advance in our ancestors' efforts to harness the waters to their service. In this design the framework of the craft is of wickerwork made watertight by several devices. The Indian coracle probably preserves to us the original type; it consists of a very large wide-mouthed circular basket of much flattened form; it may indeed be termed flat-bottomed; the sides are comparatively low (Pl. V, fig. 6). A common size is fully 12 feet in greatest diameter which coincides with the mouth, the bottom being of smaller diameter. Over the outside is stretched and fitted a hide covering which efficiently excludes the water. In Tanjore and along the course of the Cauveri it used to be extensively employed in ferrying passengers across rivers but to-day it is going steadily out of use before the advance of the bridge-maker. This Indian coracle differs considerably in form from the Arab *guffa*, greatly in evidence for the same purpose on the Tigris and Euphrates, the latter having convexly curved sides with the diameter of the mouth less than that of the equator. A further distinction is that in the Mesopotamian design a hide covering is discarded in favour of pitch, but the former method is the older, for Herodotus tells us that hide-covered coracles were used by Assyrian wine-merchants to convey the produce of their vineyards down the Tigris to the cities of Chaldea. He tells us too that each merchant took with him one or even two asses in the coracle so that after selling the cargo, he might dismantle the framework, sell it for what it would fetch and then load the hide on one of the asses, returning home by land. The coracle has indeed a notable lineage and in its distribution ranges as far west as Ireland, where to-day on the Donegal and Clare coasts, elongated boat-shaped coracles are extensively used in the sea-fisheries. This altered shape permits of oars being used. These Irish coracles are covered with tarred canvas.

Lastly we have the double palm-butt dug-out in use on the Godavari river (fig. 21). The main features of these have already been described in pointing to them

as most probably the prototype of the strange shoe-dhoni of Cocanada and the Godavari delta. The name they go by is *sangādam* and it is noteworthy that this term is used also in Ceylon and in the Tamil country of the south for any kind of double canoe.

Of river craft other than the primitive relics of prehistoric boat-building, the Ganges from Benares to the sea provides the best Indian example of a busy inland waterway. Except on the crowded rivers of China, a busier scene than that in the lower reaches is nowhere to be met with anywhere in the world—two endless processions of craft of all sizes, but in the main of one general type, passing continuously up and down on the bosom of the silt-laden mother of rivers.

A distinctly old-world feeling pervades the scene; the majority of the boats have the high stern and low bow of the craft that crowded the Nile in those far-off days before Arab influence had appeared to change out of all semblance the stereotyped

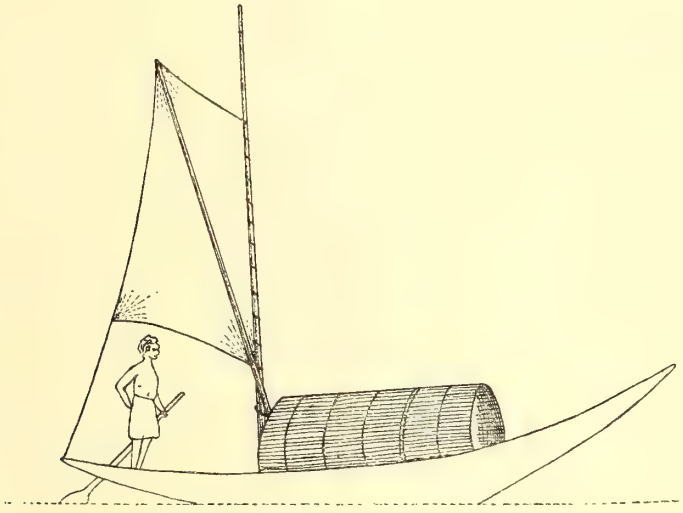

FIG. 24.—A Ganges dinghi.

designs affected by the worshippers of Amen and Osiris. The chief exception is the ubiquitous one-man passenger dinghi of sampan habit that loiters about hawkeyed on the look-out for possible fares (fig. 24). In these little skiffs, the mosquito craft of the river, the boatman squats aft paddling on the low sharp stern. The bow rises sharply to end in a narrow-pointed stem about 2 to 2½ feet higher than the level of the stern. A neat cabin with semicircular roof occupies the space available amidships. With a fair wind and some considerable distance to go, a tall bamboo mast is stepped abaft the cabin and a thin cotton sprit-sail hoisted high enough to enable the boatman to see ahead as he stands at the stern steering with a long paddle.

All the larger boats, whether small fishing boats or large rice carriers, with the frequent need to row against the current are characteristically low forward. The stern is particularly high with a view to give the steersman a clear outlook. Usually bow and stern are sharp, the latter greatly raked. These boats may indeed be said to be

identical in all their essential features with the lesser craft depicted on the walls of ancient Egyptian tombs or preserved to us in models made for the use of the dead.

The fishing boats, often passenger or cargo dinghis converted for the nonce, may

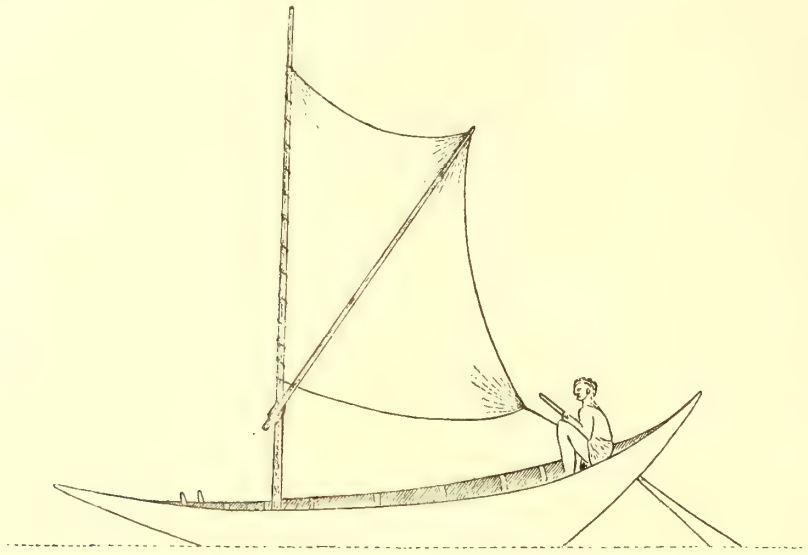

FIG. 25.—A Ganges Fishing Boat.

or may not have a cabin amidships, but all carry a high spritsail set well forward towards the bow and not aft as in the little sampan dinghis (fig. 25). This form, manned by 3 or 4 men, is greatly in evidence during the hilsa season when a long procession

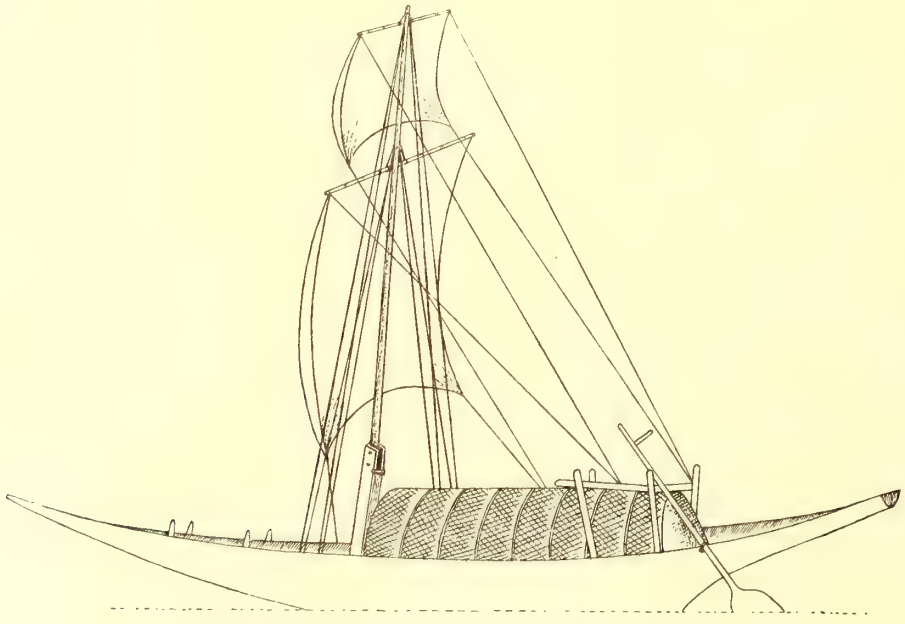

FIG. 26.—Topsail river boat of the Ganges.

of these boats is often to be seen drifting rapidly down stream with nets submerged, with another series sailing or rowing upstream with decks encumbered with the huge bamboo crescent trap-mouths of their sangla net.

Above this size of boat, the spritsail rig is seldom used; a big squaresail takes its place with a topsail above in many cases (fig. 26). The mast is always stepped far forward. Right in the bows a number of wooden thole-pins are set in the gunwale ready for use with the powerful sweeps usually lying alongside ready for a loss of wind or tide.

The most remarkable feature of these cargo carriers is the great steering paddle. Supported in a grommet from the quarter gunwale, the shaft is specially long as the steersman works it from a high platform on the aft roof of the cabin. To give easy leverage a short handle bar—the prototype of the tiller—is fixed at right angles into the paddle shaft near the free end.

The blade itself is very wide and powerful, but rather short. This form of steer-

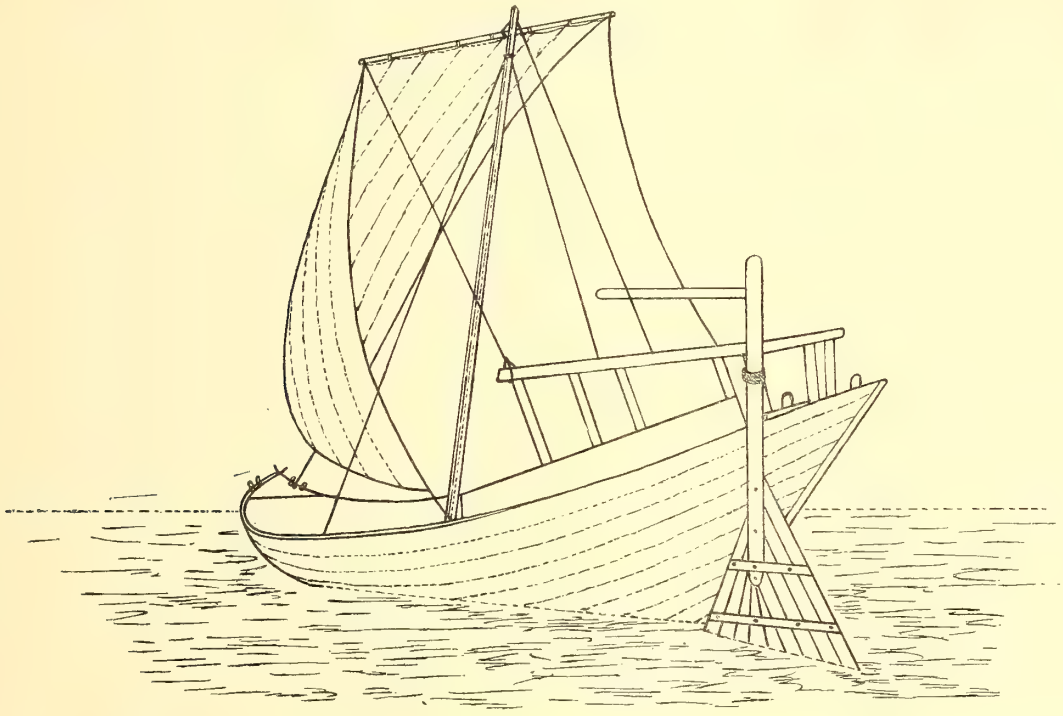

FIG. 27.—A cargo-carrier of the Ganges.

ing paddle is essentially the same as the type of fixed quarter oar characteristic of ancient Egyptain craft. It is notable that in Egypt this device was employed even in quite small boats whereas in Bengal it is never used except in the cargo carriers. In the largest river cargo carriers a very wide and powerful rudder takes the place of the steering paddle (Pl. I, fig. 2); in many cases it assumes the form of a balanced rudder in which a considerable portion of the blade is placed forward of the turning axis exactly as in the fixed quarter steering paddle from which it is plain to see it is directly derived. Between the steering paddle and the balance rudder fitted upon a sternpost, an intermediate form (fig. 27) is sometimes seen; in this the balanced rudder form in nearly all its details is used, but differs therefrom in being hung from the quarter and not upon the sternpost.

In Burma an entirely different type of river craft is in use, bigger, smarter, and better built by far than the rough and archaic Bengal rice carriers. To quote the description given by Warington Smythe in his charming "Mast and Sail":—

"Owing to the prevalence of the southerly sea breeze which blows upstream for many months after the end of the cool season, these boats are rigged only for running up against the stream. When going against the wind they punt or pull along with the current, and never beat to windward. The squaresail, or square-headed lug, is the only sail practically known in Burma. And in these boats the mast is a triangle formed of two spars meeting at the apex in a manner already familiar to us in ancient Egyptian drawings of the third and fourth dynasties, and still also used in the Red River of Indo-China.[1] The yard is a standing spar supported by a network of halyards. The sail and its topsails are brailed up to the mast, and when set are hauled out along the yard from the deck. A crowd of these craft running before the fresh south wind up the broad Irawaddi form a fine sight in their way."

The most beautiful work in these boats is about the stern and the steersman's seat upon which the Burman loves to bestow his most elaborate and careful wood carving. Here, as Warington Smythe remarks," the classical scholar may recognize his old friend the ancient κυβερνητης sitting in state raised aloft beneath his ἄφλαστον; and he may study almost the identical method in which Greek heroes and Roman merchantmen used to sling their oar-blade rudders on the quarter, following the Egyptian example which takes one back to the very earliest days of man's boat-building.

Some up-river forms of boats among the Burmans and Talaings are very pretty and elegant. The fiddle-head 'clipper' or 'schooner' bow shape is a great favourite, although, owing to the shallowness and rounded-up form of the ends of these canoe-built craft, the lower edge of the stem is frequently carried right out of water."

For minor river and creek work, dug-out canoes are everywhere in evidence in Burma, the design light and more elegant than that of Malabar. In Burma proper the clipper bow and overhanging stern common to the large river craft are adopted, giving an exceedingly graceful appearance. In the Shan States on the great Inle Lake, the fishermen use a narrow shallow design very lightly hollowed along its length except at either end where it is left flat to form a tiny platform. Both ends are broad and truncated, terminating in two short claw-like horns. It is virtually a hollowed-out plank rather than a dug-out tree trunk; its draft is exceedingly small and its form such that it can be poled with ease over weed-grown shallows where no deep dug-out could pass.

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[1] It was also the common mast form in Java in the 8th century as shown in the Boro Budur sculptures in that island.—J. H.

PART II.—A REVIEW OF OUR KNOWLEDGE OF ANCIENT SEA-TRADE WITH INDIA.

Before discussing the ethnological bearing of the facts enumerated in Part I, and seeing what light they shed on the question of trade intercourse between India and the surrounding nations and races prior to the modern historical Indian sea-era which dates from the arrival of the Portuguese in 1498 A.D., we require to review our knowledge of the subject as obtained from sculptures, drawings, and inscriptions in respect of the most ancient nations, and from historical writers and geographers in classical and mediaeval days. Taken more or less in order of their age, we may list the countries or races that have had or may have had trade intercourse with India as follows:—Egyptian, Babylonian and Assyrian, Phoenician and Jewish, Greek, Sabæan and Arab, Chinese, and finally Malay and Polynesian.

The Egyptians.

The ancient Egyptians have not commonly been accounted a sea-faring race but we have ample evidence, in the frequent representations of boats and galleys of sizes from a one-man punt to large sea-going cargo galleys, and from the important part played by boats in funeral ceremonies, that they were no mean boat-builders and sailors, though it is not unlikely that the pilots and crews employed on ships engaged in oversea trade were often recruited from coast people not necessarily Egyptian by race. Even as far back as the pre-dynastic period which probably lasted till after 4000 B.C., we see crude representation of boats painted on pottery and in rude incised pictures on the rocks. Besides the light boats in which they attacked the hippopotamus and the crocodile with harpoons and lances, they built vessels of considerable size on the Nile, apparently propelled by many oars; sailing ships were rare but were not unknown.

In the old kingdom which lasted from 2980 to 2475 B.C.,[1] in every town and on every large estate ship-building was constant. There were many different styles of craft from the heavy cargo boat for grain and cattle to the magnificent galley of the noble, rigged with a great square sail.

It is important to note that while in the oldest Egyptian boats as depicted on prehistoric pottery their one mast was a single spar, representations of those belonging to the dynasties from the 4th to the 11th frequently show the mast as double, formed of two spars stepped apart but so inclined in A-form as to meet at the mast-head. From the 11th dynasty the single-spar mast alone survives.

Sneferu of the 4th dynasty, who ruled *circa* 2900 B.C., built vessels nearly 170 feet long for traffic and administration on the Nile. He opened up commerce with the

[1] All these ancient Egyptian dates are still problematical. Some authorities would put the earlier of these dates over 2000 years further back. I employ the chronology adopted by J. H. Breasted in *A History of the Ancient Egyptians*, London, 1908.

north, and the journey of the 40 vessels which he sent to the Phoenician coast for cedar out of Lebanon is the earliest known mercantile expedition on the open sea. The first war-fleet soon followed, for a relief belonging to the time of Sankh-ka-Ra (*c.* 2743-2731 B.C.), discovered at Abusir, shows four of his ships with Phoenician captives among the Egyptian sailors. This is the earliest surviving representation of sea-going warships. More directly interesting to us are the references to the sea trade between Egypt and a certain mysterious land of Punt never yet determined positively, that now begin to appear. The enterprising Sankh-ka-Ra (or Sahure) after his success in the Mediterranean, next despatched another fleet to Punt. Some 1,250 years later the autocratic Queen Hatshepsut is recorded as having sent a fleet of five ships to the same land (*c.* 1500 B.C.), and it is certain that numerous others, whereof the records are lost, had gone from time to time to the same destination in quest of the aromatic gums required by the Egyptians in large quantities for embalming. The precise location of Punt has been a fertile source of dispute among Egyptologists, and at first I felt inclined to put in a claim for South India. Punt might well be an Egyptian rendering of Pāndya, the dynastic name of the kings of the extreme south from the earliest historic times. The idea is attractive in view of the subject of the present enquiry and of the fact that the Egyptians described the people of Punt as resembling themselves, which neither the Arabs nor the Abyssinians do, whereas many Indian people, particularly on the West Coast, do sufficiently closely approximate to merit such a remark.

But the products brought back, gold, ivory, ebony, myrrh, dog-headed apes, leopard skins and incense trees, while in the main Indian as well as African, in the inclusion of dog-headed apes and incense trees, both distinctive of Somaliland and South Arabia, and in the omission of spices, pearls, diamonds, teakwood and peacocks, some of which would certainly have been found in return cargoes from India, force one reluctantly to the conclusion that South Arabia or the neighbouring African coast was the utmost limit of this ancient sea-traffic. But if early Egyptian sea-trade did not extend to India down to 1000 B.C., a power which had for centuries been gradually learning sea-craft in the hard school of the rough waters of the Eastern Mediterranean in subordinate competition with the Minoans (who seem to have been the earliest sea-power of consequence in the Mediterranean), on the fall of the latter, expanded with sudden vigour and became at once their greater and more brilliant successors. Thus, good as the Egyptian sea-galleys were, those of the Phoenicians were better and as early as the time of the great Thothmes III (1501-1447 B.C.), nephew of the lady who sent her fleet to Punt, Phoenician galleys such as the Nile had never before seen, delighted the eyes of curious crowds at the docks of Thebes.

The Jews, Phoenicians and Persians.

Whether the Phoenicians traded by any sea-route with India prior to the tenth century B.C. is extremely doubtful; it is most probable that what Indian produce reached Babylon for sale or barter to Phoenician merchants went in the main overland through Persia so far as the smaller and more precious articles were concerned,

while the less valuable and more bulky were carried in small Indian or Arab coast craft from Malabar and Gujarat to Babylon itself which then was nearer the sea than at the present day.

The insatiable needs of that magnificent potentate King Solomon (*circa* 950 B.C.) appear to have been the cause of the first great attempt to open up direct sea-trade with India. For this purpose he found it necessary to enter into a working partnership with the greatest sea-king of the time, Hiram of Tyre, who aided him with timber from Lebanon, with shipwrights to build vessels, and with sailors and pilots to take them eastward to Ophir which cannot well have been other than a great mart on the West Coast of India,[1] where the produce of the gold mines of Hyderabad,[1] of the spice lands of Malabar, and of the gem-workings of Ceylon, were concentrated to meet the foreign merchant-king's requirements, just as, at a later age, this rôle was occupied first by Broach and later by Surat.

To plan a lengthy trading voyage from the head of the Red Sea and across the Indian Ocean without preliminary exploration is unthinkable; Egyptian sailors many centuries before had found their way to Punt, and where they went, the Phoenicians would find it easy to follow. Saba, the Biblical Sheba, occupying the south-west corner of Arabia and comprising Aden and Musa among her ports, was probably the usual mart where Egyptian and Phoenician products were exchanged for the spices, gold and precious stones of India and Ceylon. If so, it is a fair inference that Solomon's "wisdom" in equipping a fleet for direct trade with India, had the elimination of very greedy middlemen in the persons of Sabaean traders as its mainspring of action. Here I may mention that the term Sabaean as equivalent to Arab lasted at least till 400 A.D., as Fa-hien who travelled in India and Ceylon A.D. 399-414 in describing Anuradhapura in Ceylon (Beale's translation), says: "In the city there are many Vaisya elders and Sabaean merchants whose houses are stately and beautiful." Legge, a competent authority upon Chinese, remarks (as quoted in the *Ceylon Literary Register*, Vol. II, p. 216), "Sabaean as Mr. Beale's rendering of them (the Chinese characters) is probably correct. I suppose the merchants were Arabs, forerunners of the so-called Moormen, who still form so important a part of the mercantile community of Ceylon."

The prophet Ezekiel in his "Dirge of Tyre"[2] enumerated among the merchants who traded in her markets, those of "Sheba with spices, precious stones and gold." Of these, spices are not typical products of Arabia, and if Saba bartered them with Tyre, it was as a trade intermediary between Tyre and India.

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[1] Possibly Ophir was not the name of any particular city; it may have been the name of some district on the West Coast of India. It is noteworthy that in the Septuagint it appears as Σωφάρα, and that Sôphir is the Coptic name for India (M'Crindle's Translation of the "Periplus," p. 127). Supara near Bassein, mentioned as Souppara in the "Periplus" as an important town and rival of Broach, would also answer fairly well as an outlet for the gold of Hyderabad, but H. G. Rawlinson (*India and the Western World*, p. 12) on the other hand considers Ophir to have been an Arabian trading port at the mouth of the Persian Gulf on the coast of Oman. This I doubt greatly. The Phoenicians were too expert seamen to require three years for a round voyage to Oman and back, whereas to a port on the Indian coast, this period would be reasonable under the conditions then prevailing.

[2] Ezekiel xxvii. 22.

It does not seem that the direct sea-trade initiated by Solomon and Hiram between the Red Sea port of Ezion Geber (the modern Akaba) and India became permanent. Doubtlese Sabaean power, seated astride the highway to India at the Straits of Bab-el-mandeb, was able to check any but a powerfully armed fleet, while their alliances with Indian coast rulers were doubtless strong and, as happened when the Portuguese arrived, they would oppose by force as well as guile the entry of any new sea-power. Hence I cannot believe that Phoenician sea-trade penetrated to India directly except on such exceptional occasions as Solomon's Ophir expeditions. We have no knowledge of any Phoenician trading settlement towards India except the probability of one upon Bahrein Island, which must have been maintained by the Phoenicians principally as a pearl-purchasing station.[1] It would also form a convenient centre for their purchase of Indian wares from Indian merchants resorting thereto on the same errand as themselves. That no Phoenician settlements save Bahrein were made on Asiatic coasts east of the Levant, whereas they had innumerable colonies and settlements throughout the Mediterranean, must clearly have been due to the impossibility of adequately supporting and reinforcing stations to which the only access was by caravan through Babylonian or Egyptian territory. Hence their undoubted preference for a concentration of effort in the Mediterranean where their sea-power permitted direct communication by sea between the mother city and her daughter colonies. It is obvious that Indian trade would be more safely carried on in co-operation with the Sabaeans and other peoples of the Arabian littoral. Phoenician traders probably did make their way east from the Red Sea and the Persian Gulf, but for the most part it would be as individual traders on Arab or Indian ships and not in great companies in fleets of their own. The difficulty of finding timber fit for constructing large boats would be not the least of their difficulties seeing that neither the Egyptian coast nor that of the Persian Gulf provides any really suitable timber nearer than Syria and the Kurdish mountains respectively. When Sennacherib in 705 B.C. wished for the assistance of a fleet for his attack on the sea-coast of Elam, he had to send for Phoenician ship-builders and the timber used had to be brought laboriously from Lebanon by caravan. Only the inferior native craft transformed on the Tigris into galleys for the occasion were made of Kurdish wood and that also was not easily procured.[2] It is very probable however that the coast people used imported Gujarat and Malabar teak, for in the Achaemaenid city of Susa built by Darius within 200 years of Sennacherib's time we find fragments of this wood; such a bulky article was certainly not brought overland through the passes of Afghanistan. In the ruins of the same city carved articles, libation vessels and bangles, made from the Indian conch are abundant,[3] and as these are found plentiful at the present day on the coast of

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[1] Strabo (*Geography*, XVI, 3. 3–5) describes the shores as dotted with Phoenician temples, whilst of recent years excavations of some of the myriad tumuli on this island, have yielded remains which are believed to be Phoenician (*Report, Indian Archael. Survey*, 1912–13).

[2] Maspero, G. *Ancient Egypt and Assyria.* London, 1892, p. 340.

[3] Hornell, J. "The Indian Conch" in *Mar. Zool. of Okhamandal*, Pt. II, p. 2, London, 1916. These articles are in the Louvre Museum, Paris.

Kathiawar, the province traditionally associated with early Indian sea-trade, we may be reasonably sure that in 500 B.C. ships built of Indian teak and manned by Arab and Indian sailors were carrying on a brisk trade between India and the Persian coast and equally certainly with Aden and the ports of the Sabaeans.

Historical evidence indicates that the external sea-trade of India received great stimulus at this period from the far-sighted commercial policy of Darius. This, like that of Alexander, two hundred years later, had for one of its objects the exploration of the seas between India and the West. The great king employed a Greek mercenary, Skylax of Karyanda, to test the possibility of establishing communication by sea between the Indus and Egypt. Herodotus states definitely that after the completion of this voyage which took thirty months, and the conquest of the Indus Valley, Darius "made use of the sea in those parts."[1] The completion by Darius of the Suez Canal, began by the Pharaoh Necho,[2] was doubtless part of an ambitious scheme designed to link up the Mediterranean with the Indian and Persian coasts and to utilize sea-power in maintaining the authority of the central power over outlying seaboard regions difficult to reach by any land route.

The Greeks and Arabs.

With the destruction of Tyre by Alexander the Great in 332 B.C. and the pioneer voyage from the Indus to the head of the Persian Gulf of a Greek fleet of galleys built on the river Hydaspes,[3] the Greeks, already an enterprising seafaring people, took the place occupied so long by the Phoenicians in sea-trade, and having by Alexander's triumphant campaigns obtained what their predecessors had lacked—territorial bases on the Red Sea and the Persian Gulf—at once were able to develop trade with India upon a scale never before attempted. Now began the era of the Greek geographers who sometimes from personal travel and oftener from the lips of Greek and Arab and Indian traders, put together the first pilot's itinerary of the Indian Ocean and constructed the first rough maps of the Asiatic coasts of which we have any knowledge. Among the foremost events of Greek dominance in Asiatic waters was the opening of the port of Berenice, due east from Assouan, by Ptolemy Philadelphus

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[1] Herodotus, IV, 44.

[2] *Ibid.*, II, 158.

[3] Nearchos, the admiral of this fleet, has left an extremely valuable account of the voyage. He enumerates the names of the commanders of 33 galleys—all Greeks with the exception of one Persian—and although several of these appear to have been replaced by others before the Indus was left, we may infer that Nearchos' expedition approximated to this number. The total of Alexander's fleet that left the Hydaspes is given as 1,800, which "included the long narrow war galleys, the round-shaped merchantmen and the transports for carrying horses and provisions to feed the army." The bulk of these were Indian-built river boats collected locally, but as we know that some new vessels were built specially, we may be certain that the sea-going war-galleys were of this number, as river boats would not be suitable for the long voyage projected up the Persian Gulf. Just as Solomon and Sennacherib had to invoke the help of the Phoenicians, so here again their skill as designers and as shipwrights was doubtless invaluable to Alexander; we are not told so specifically, but as Nearchos states that Alexander provided crews for the vessels by selecting from those Phoenicians, Cypriotes, Egyptians and islanders in his army, all "those who were skilled in seamanship to manage the vessels and work the oars," we may be sure he fully utilized the shipbuilding skill of these races to the utmost. We must infer therefore that the sea-fleet consisted solely of war vessels designed after the accepted Phoenician and Greek types of the day; they were not of local or Indian design.

in 285 B.C., and the establishment of direct trade with India. The merchandise landed at Berenice was carried on camelback 258 miles through the desert to Koptos, whence it was transported south by barges to Alexandria. An alternative and in some respects more convenient port further north at Myos Hormos was subsequently opened by the same monarch in B.C. 274, but even this involved a desert march of over 100 miles to Koptos. This was the beginning of the golden age of ancient sea-trade between Egypt and India, which received increased impetus when the Romans seized Egypt on the death of Cleopatra. For some three hundred years thereafter, this trade must have been relatively enormous to anything that had preceded it.

Pliny tells us that the trade with Rome was chiefly in spices, condiments, scents and unguents beloved of the gourmet and voluptuary. Pepper curiously enough was in exceptionally great demand and reached incredibly high prices, sometimes rising nearly to ten shillings a pound. From Pliny's figures the drain of money to India became even an economic danger as India took little merchandize in exchange. As much cash and bullion (100,000,000 sesterces) as are equivalent to a sum variously estimated at from £800,000 to £1,000,000 of our money are said to have been annually paid by Rome for Indian produce in the heyday of the Empire.[1]

To give some particulars, Strabo tells us that in his time (B.C. 63–A.D. 23) the trade between India and Egypt *viâ* the Red Sea had increased enormously since the Ptolemies, when "scarcely any one would venture on this voyage and the commerce with the Indies." In his time great fleets of as many as 120 vessels were engaged in the trade, sailing from Myos Hormos.[2]

From Pliny the Elder (A.D. 23–79) we learn that the fleet for India chiefly used the port of Berenice, leaving Egypt in the middle of summer and returning in December or January, from which we see that the monsoon winds were known and taken advantage of, for if the vessels arrived off Aden in August the worst of the south-west monsoon would be over and the current setting eastwards along the Arabian and Mekran coasts would bring the fleet to Broach and Malabar just at the time when in present days the Arab fleet from Busra drops anchor in Bombay and Calicut harbours. Returning towards the end of the year they would have equally favourable weather, just missing the unfavourable strong north-west wind that prevails in January.

Ptolemy of Alexandria who flourished towards the end of the second century gives a formidable list of Indian ports, bespeaking prosperous economical conditions, but it is the "Periplus of the Erythraean Sea," written as far as can be learned by an Egyptian Greek soon after the beginning of the second half of the first century, that pictures most vividly the sea-trade of that time. Maritime knowledge and skill had markedly advanced since Strabo's days; navigation had become systematised and new routes discovered. Thus instead of hugging the coast round the head of the Arabian Sea, the fleets from Berenice and Myos Hormos after making Mūza," an established and notable mart of trade," situated some 25 miles north[3] from the

[1] Pliny's *Natural History*, XII, 18. [2] Strabo, *Geography*, II, 5. 12.

[3] Not "25 miles *south* of Mocha," as given by R. Mukerji, *Indian Shipping*, London, 1912.

present-day port of Mocha, proceeded first to Eudaimon Arabia, the modern Aden, and thence to another great port on the South Arabian coast called Kanê, which has been identified with the port now called Hisn Ghorâb. From there the section for Broach sailed to the Indus and thence coastwise to their destination, the most suitable course for sailing vessels; the fleet for Malabar struck straight across the Indian Ocean direct for their objective. A third route for the Malabar fleet was from Cape Guardafui. The monsoon winds were well understood and all these courses were based upon a proper utilisation of their seasonal changes. From the same author we learn that in addition to the Graeco-Egyptian trade, India had direct dealings with Arabia, the east coast of Africa and the towns on the Persian Gulf—precisely the same places served by Arab and Indian sailing craft of the present day.

It is best to let the author of the "Periplus" tell of this trade in his own words,[1] as this record constitutes virtually nearly everything definite that we know of Indian and Arab ship trade at the commencement of our era.

Muza, at the south end of the Red Sea and the chief port of the wealthy and long civilized Arab kingdom of Sabaea, was "full of Arabian shipmasters and common sailors and was absorbed in the pursuit of commerce, for with ships of its own fitting out, it traded with the marts beyond the straits on the opposite or African coast and also with Broach."

Aden, then known as Eudaimon Arabia, was under the same Arab ruler as Muza —the king of the Homerites and Sabaeans—and was called Eudaimon (rich and prosperous), "because in bygone days, when the merchants of India did not proceed to Egypt and those from Egypt did not venture to cross to the marts further east but both came only as far as this city, it formed the common centre of the trade, as Alexandria receives the wares which pass to and fro between Egypt and the ports of the Mediterranean. Now, however, it lies in ruins, the Emperor having destroyed it not long before our times."

Kanê, further along the coast, the *Periplus* informs us, "carried on trade with ports beyond the ocean—Barugaza (Broach), Scythia (Sind) and Omana and the adjacent coast of Persia." We are also told that "the population of Sokotra consisted of foreigners, Arabs, Indians, and even Greeks, who resorted thither for the purposes of commerce." After mentioning Apologos, as a regular mart of commerce at the very head of the Persian Gulf (whereof the site is now between Busra and the Euphrates), and Omana, a town on the Persian coast, we learn that Broach "maintains a regular trade with both these ports, despatching thither large vessels freighted with copper, sandalwood, beams for rafters (teak), horn, and logs of sasamina and ebony. Omana exports to Arabia a particular species of vessel called *madara*, which have the planks sewn together (*Cf.* Marco Polo's description of the Ormuz trading ships). But both from Apologos and Omana are exported to Broach and to Arabia great quantities of pearls, together with purple cloth for the natives, wine, dates in quantity and gold and slaves."

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[1] M'Crindle's translation.

Finally we note that the coast between Bombay and Goa was infested with pirates in Greek times; overseas merchants dreaded it greatly, as it lay so close to Muziris, one of the chief Malabar ports of that day. The *Periplus* states that this city was then at the height of its prosperity and "frequented by ships from Ariake (i.e. Indian ships from Gujarat) and Greek ships" (from Egypt).

To the above we may add an extract from Pliny[1] where it is said:—

"To those bound for India it is most convenient to depart from Okelis" (a village opposite the island of Perim). "They sail thence with the wind Hippalus in 40 days to the nearest emporium of India, Muziris (the modern Cranganore according to Yule and Caldwell),[2] which is not a desirable place of call on account of pirates infesting the neighbourhood, who hold a place called Nitrias (Mangalore, according to Yule), while it is not well supplied with merchandize for traffic. Besides, the station for ships is at a great distance from the shore and cargoes have both to be landed and shipped by means of little boats. Another port belonging to the nation is more convenient, Neacyndon which is called Becare. There Pandion used to reign in an inland town called Modura far distant from this emporium. The region from which they convey pepper to Becare in boats formed of single logs, is called Cottonara."[3]

From this time we lose definite sight and knowledge of Graeco-Egyptian trade with India, which collapsed with the decline of Rome in the fourth century and passed again largely into the hands of the Arabs to whom after this we have to look almost entirely for information on Indian external sea-trade till Marco Polo and the other Italian forerunners of the Portuguese appear on the scene.

The fact that Solomon when he wanted to create a Red Sea fleet of traders had to build the necessary vessels with the aid of artizans brought from Tyre proves that there were no suitable vessels available in 950 B.C. on the Red Sea to act as oversea cargo carriers and is conclusive evidence that no regular and extensive direct sea-trade with India could have existed prior to this date; occasional and elaborately prepared expeditions sent forth by royal edict for special purposes, and petty trading by means of small craft creeping slowly along the coast and usually selling their cargo at some intermediate trading port to be carried further in another boat (see *Periplus*, sec. 14), appear to have been the custom in the early centuries of sea-commerce between India and the West; the importance of this commerce appears to have been early perceived by the Sabaean Arabs, and for centuries before the Greeks entered the field, these enterprising and highly civilized people had made their ports the entrepots for Indian and Egyptian commodities. The Greek historian Agatharchides, the contemporary of Ptolemy Philomentor (181-146 B.C.), described Sabaea as owing her importance and great prosperity in large degree to the monopoly enjoyed of the Indian trade. He states having seen large vessels coming from Potana (Patala)

[1] Book VI, Ch. 23 (26).

[2] Caldwell in his *Comparative Grammar of Dravidian Languages* (Introduction, p. 97) says that Muziris appears to be the Muyiri of Muyiri-kotta, while Neacyndon or Nelkynda seems to be the southern boundary of Kerala proper.

[3] Burnell considered Cottonara to be the district round Tellicherry, Kolatta-nadu, the finest pepper-producing district in Malabar. Yule conjectures that Becare, which was the seaport of Nelkynda, lay between Kanetti and Quilon in Travancore.

on the Indus, and makes mention of the great numbers of Indian merchants who resorted to Sabaean ports to sell and barter their goods to the Sabaeans who in turn sold them to the Egyptians and the Greeks. It seems certain also that in the prosecution of this trade the Indian and Arab shipmasters made use of the monsoon winds to steer directly to and from India, knowledge which, we may be sure, was as jealously guarded as that of the Cape route to India by the Portuguese.[1]

With the rise of Greek world supremacy under Alexander, Greek commerce became dominant and what the Arabs had done previously in a small and ineffective manner to exploit Indian sea-trade was taken up and developed by the Greeks to enormous dimensions, particularly in later days, in their enterprising endeavour to satisfy the needs of Roman extravagance. The luxury of Rome in the ostentatious competition of the wealthy in the squandering of money on foreign luxuries and rarities, in my belief, was the ultimate factor that finally entailed the opening of the sea-gates of India in the second century B.C., gates which the Egyptian Greeks had been endeavouring to force ever since Alexander's navigators had demonstrated the vast possibilities of direct sea communication and its immense advantages over long and hazardous land route. Alexander may justly be counted the father of sea-trade between East and West.

With the creation in Europe of an almost unlimited market for the spices of India a couple of centuries or so prior to the commencement of our era, the seafaring Arab, who had undoubtedly been concerned in a petty way with Indian trade for centuries before, became at once a factor of importance. We are not told by any Greek or Roman writers what crews manned the Greek-owned Indian argosies; can we doubt that they were Arabs in the main? Their previous knowledge of the trade would be invaluable to Greek merchant-venturers, and any other supposition is difficult in view of the fact that the author of the "Periplus" continually mentions the presence of Arab traders and ships in the course of his voyaging, as also did the Chinese traveller Fa-hien some 300 years later (between 399 and 414 A.D).[2]

The Chinese trade connection now comes into view and it is noteworthy that the Arabs and Chinese held intimate commercial relations from very early times. We find from Chinese records that even in 300 A.D. enterprising Arabs from the southern Arabian coast had established a colony at Canton. The earliest Arab narratives relating to Chinese trade belong to the ninth century; from these we gather that "Chinese goods were very expensive at Basra and Bagdad because of frequent fires at Canton and because ships are frequently wrecked or taken by pirates."

From various indications it seems probable that the bulk of the direct trade between India and China between the ninth and fifteenth centuries was carried in Chinese bottoms. Marco Polo's description of the one-masted Arab vessels which carried horses and merchandize between the Persian Gulf and the West Coast of India,

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[1] The charts necessary for the voyage to India were given to the Commander prior to sailing from Lisbon and had to be jealously guarded by him and given back upon his return home. (Caboton, A., *Java, Sumatra and the other islands of the Dutch East Indies*, p 29. London, 1911.)

[2] *Loc. cit. supra.*

shows clearly that these were not well suited to the longer and more dangerous voyages to China, and the same writer has left a description of the vessels engaged in the Indo-China trade which shows them to have been typical junks. That he makes no mention of any other class of vessel engaged in this trade as he would certainly have done had there been any, seems to show that the accepted idea of the meeting of Chinese with Arab vessels at Kayal, Quilon, Calicut and Deli was the normal one, in spite of the fact that there was an Arab settlement in Canton dating from 300 A.D. The inference is that the Arab traders utilized Chinese vessels for their operations, just as Arab firms, were there any now in China, would in all probability be shipping Chinese goods to India in British-built steamers. This view receives complete confirmation from Ibn Batuta's statement that the voyage to China from Malabar is so dangerous that it can only be undertaken in large vessels which are built *only at Zaitun and Sin Kilan in China*.[1] This traveller himself when he wished to proceed to China took passage in a Chinese junk then lying off Calicut.

The Arabs prior to Muhammad's time had been content with their role of peaceful traders and sea-carriers; under the impetus of fanaticism and the lust for power and wealth which increased with each succeeding success, within four years of the Prophet's death, two Arab naval expeditions were sent from Uman and Bahrein against Thana and Broach on the Bombay coast and against Debal in Sind (A.D. 637). Other raids took place in 662 and 664, and in 712 the youthful Muhammad Kasim advanced into Sind to claim damages for a Sinhalese ship seized off the port of Debal (probably the modern Karachi). Kasim himself went overland, but the great war engines—catapults requiring 500 men to work them—were transported by sea; the size of the vessels must have been considerable for the carriage of such heavy and bulky cargo. After a brilliant campaign he settled himself in the Indus valley and thus early established a naval base of the utmost value to Arab sea-traders. This intimate relationship of Sind with Arabia has ever since been maintained with the result that Sind boat designs, as already noted, are purely Arab in every respect.

With the Bombay and Malabar coast, Arab relations were almost equally intimate but there they never obtained direct territorial power although indirectly the adhesion of certain coast potentates—notably the semi-mythical Cheruman Perumal, Lord of Malabar, and at later date the sea-kings of Cannanore—to their faith, gave them enormous influence. Their power on the coasts of Southern India had reached a high level when the Portuguese arrived, and it is more than probable that if Vasco da Gama had not brought European power to India, the Arabs would have made a bid for extensive religious domination exactly as they did successfully in Java and Sumatra at the same period. The Portuguese arrived at India at one of the great psychological moments in the history of India and destroyed the one great chance the Arabs had of founding coast kingdoms in India on the decline of the Vijayanagar power.

Originally the chief object of sea-trade with India was the desire in Europe for its spices and precious stones and fine cottons; with the growth of great states in

[1] Tsiuen-chau (near Amoy) and Canton respectively, according to Yule, *The Book of Ser Marco Polo*, Vol. II, p. 190. London, 1871.

the Deccan and the south, the export of horses from the Persian Gulf became to Arab shipowners even more important. Marco Polo as usual is a mine of information on Arab trade. He tells how in one of the kingdoms of Java the Less (Sumatra) "the idolators *by frequent trade* with Saracen merchants are converted to the law of Muhammad"; how in the south of India the kings of Ma'abar (the Arab name for the Pandyan country on the Gulf of Mannar) buy their horses from Ormuz, Aden and other Arab ports. Still more valuable is his description of the Arab ships he saw at Ormuz:—

"Their ships are wretched affairs and many of them get lost; for they have no iron fastenings and are only stitched together with twine made from the husk of the Indian nut. They beat this husk until it becomes like horse-hair and from this they spin twine and with this stitch the planks of the ships together. It keeps well and is not corroded by the sea-water, but it will not stand well in a storm. The ships are not pitched but are rubbed with fish oil. They have one mast, *one sail*, and one rudder, and have no deck but only a cover spread over the cargo when loaded. This cover consists of hides, and on the top of these hides, they put the horses which they take to India for sale. They have no iron to make nails of, and for this reason they use only wooden trenails in their shipbuilding and then stitch the planks with the twine as I have told you. Hence 'tis a perilous business to go a voyage in one of these ships, and many of them are lost for in that Sea of India the storms are often terrible."[1]

From this we gather the valuable fact that the Arab ships of the Kerman coast at the end of the thirteenth century continued to be built in the same manner as when the author of the *Periplus* saw them in the first century of our era and remarked upon the strangeness of sewing the planks of the hull together instead of using nails for the purpose. The sea-going boats of the Laccadive islands and some of the shore boats of the Malabar and Coromandel coasts continue the plank-sewn tradition to the present day, no metal bolts being employed in their construction. Marco Polo's description further indicates the probability that the mizzen mast had not yet been introduced. The dhow of the thirteenth century also appears to have had no high poop, otherwise such a prominent feature would surely have been remarked by this traveller whose descriptions are always accurate and detailed of what he himself saw. The type was apparently a small edition of the large Kathiawar Dhangi, sharp and comparatively low at the stern. The addition of the aft castle or poop with richly decorated transom stern, as seen in the Arab Baggala and the Indian Kotia of the present day, appears to have been adopted from the Portuguese caravels; the resemblance between them is most striking and convincing.

Beyond this we need not follow the course of Arab trade and ship design. It merges henceforward into the realm of every-day knowledge.

The Chinese and India.

Chinese trade next requires attention. We have seen how an Arab colony was founded in Canton about 300 A.D. We have Chinese travellers in India and Ceylon

1. Yule's *Marco Polo*, Vol. I, p. 102 (1871).

at the end of the fourth century, and in the ninth century Arab narratives, as we have seen, deplore the costliness of Chinese goods in the Basra and Bagdad bazaars owing to the dangers of the sea and the attacks of pirates.

Probably the earliest notice of Chinese vessels in Indian seas belongs to the first half of the fifth century when according to Hamza of Ispahan and Ma'sudi, the ships of India and Ceylon were constantly to be seen moored as high up the Euphrates as Hira, near Kufa, a city lying some 45 miles south-west of ancient Babylon.[1]

As Yule points out, after this a gradual recession took place in the position of the headquarters of Indian and Chinese trade. From Hira, it descended to Obolla, the ancient Apologos; from Obolla, it was transferred to the neighbouring city of Basra; from Basra to Siraf on the northern shore of the Gulf and from Siraf successively to Kish and Hormuz. Chinese annals of the T'ang dynasty (618-907) of the 7th and 8th centuries describe the course followed of their junks in the voyage from Kwang-chau (Canton) to the Euphrates. It also appears that Chinese ships in equally early times voyaged as far as Aden.[2]

By the 12th century the furthest port of exchange resorted to by Chinese vessels appears to have been Debal, the then most famous port in Sind—probably Karachi; Al Idrisi describes it as a station whither came "ships laden with the productions of U'mán and the vessels of China and India." Broach (Barūh), he also states, was a port for the vessels coming from China as also for those from Sind.[3]

From this time onwards to the early part of the fifteenth century, contemporary notices of Chinese trading ships in Indian ports become frequent.

The chief Indian ports resorted to by Chinese junks during the thirteenth and fourteenth centuries appear to have been Kayal (the Cael of Marco Polo) on the Gulf of Mannar, Quilon in South Travancore, with Calicut and the fine bay south of Mount Deli in North Malabar. On the site of "the noble city" of Kayal, which had ceased to be a seaport before the arrival of the Portuguese about 1500 A.D. owing to the silting up of its harbour, I have found innumerable fragments of Chinese pottery, much of it thick and coarse and suggestive of preserved ginger—a sweet highly esteemed by Indians. Here Marco Polo landed at the end of the thirteenth century, and it is he also who mentions Delai (Mount Deli) as a place where "the ships of Mangi come." Quilon he mentions, but not as a terminal port for Chinese ships, though from other sources it is clear that this port was used as a clearing house by Arab and Chinese traders. In the long intercourse between China and India it is plain that with altering circumstances—the wane of one coast power and the rise of another, to say nothing of mercantile changes—a port occupying the premier position in one century might be supplanted in the next by another. Kayal, Quilon, Calicut,[4] and Deli are four regarding which we have clear evidence. In passing it is notable that early

[1] Yule, *Cathay and the Way Thither*, I, p. 83. London, 1915. Some doubt seems however to attach to the possibility of Hira having ever been a haven for Eastern trade.

[2] Yule, *loc. cit.*, p. 87. [3] Sir H. Elliot, *History of India*, Vol. I, pp. 77-87.

[4] Ibn Batuta who travelled extensively in the East from 1325 to 1349, after taking his passage for China in one of thirteen Chinese junks anchored off Calicut, records how a sudden storm drove ashore several of these vessels with the loss of many lives, the remainder of the fleet heading for the open sea as the only chance of safety.

in the thirteenth century a large Chinese fleet brought to the Malabar coast several hundreds of Chinese immigrants who remained in the country for trade and commerce. Abder Razzak in the fifteenth century (1442 A.D.) speaks of the seafaring population of Calicut being called *China bhachagan* (China boys), which can only mean that the Mapilla population had then a strong Chinese strain in it. We know also from Chinese authorities, as well as from the Sinhalese chronicle Rajawaliya, that the Chinese sent a large naval force, under the eunuch Cheng Ho, against Ceylon in the beginning of the fifteenth century, a venture which resulted in the capture of the Sinhalese king Vijaya Bahu VI and his deportation to China.[1]

The best contemporary description of the Chinese vessels trading to India is that of Marco Polo who sailed with a small fleet of junks from China to India and Persia at the end of the thirteenth century.

Quoting Yule's translation[2] Marco Polo says "and first let me speak of the ships in which merchants go to and fro amongst the Isles of India. These ships you must know, are of fir timber.[3] They have but one deck though each of them contains some 50 or 60 cabins, wherein the merchants abide greatly at their ease, every man having one to himself. The ship hath but one rudder,[4] but it hath four masts; and sometimes they have two additional masts, which they ship and unship at pleasure. Moreover the larger of their vessels have some 13 compartments or severances in the interior, made with planking strongly framed in case mayhap the ship should spring a leak.[5]"

Radhakumud Mukerji falls into the grievous error of claiming these craft as Indian-built vessels.[6] The only excuse he has is Marco Polo's occasional habit of calling them "Indian ships" *according to Marsden's translation* which Prof. Mukerji elects to quote in preference to the more modern one by Yule. But they were no more Indian built and Indian manned than were the "East Indiamen" of English Company days. They were built specifically for the Indian trade, hence the name. In every feature they were typical Chinese junks, a design never adopted by any Indian builders. Moreover instead of being of teak as they would have been if Indian built, Marco Polo distinctly tells us they were of fir, a fact which shortened their career most materially. Finally Ibn Batuta, whose direct evidence on this subject is ignored by Rahdakumud Mukerji, states distinctly that these ships "were built only at Zaitun and Sin Kilan in China." Nicolo Conti's statement to the contrary is erroneous and on a par with his story that in Bengal bamboos grow so tall and thick that fishing boats and skiffs are made from them. If he mistook a palm for a bamboo, it is

[1] A memorial stone inscribed in Chinese, Tamil, and Persian was found at Point de Galle in Ceylon, a few years ago, and records the second visit to Ceylon of the Chinese General, Cheng Ho. It is dated 15th February, 1409.

[2] *The Book of Ser Marco Polo*, Vol. II, p. 195, 1871.

[3] Yule points out that pine is still the staple timber for shipbuilding at Canton and in Fokien, *loc. cit.*, p. 197.

[4] The rudder was of the usual deeply immersed Chinese junk pattern, for in Chapter IX the author states that on approaching the island of Pentan (Bintan) off the Straits of Malacca, the sea being "not more than four fathoms in depth, obliges those who navigate it, to lift the rudders of their ships."

[5] According to Yule the system of water-tight compartments "is still maintained by the Chinese, not only in sea-going junks but in the larger river craft." (p. 197).

[6] *Indian Shipping*, London, 1912.

not remarkable that he should mistake a Chinese junk for an Indian ship. Mukerji also ignores Varthema's description (1503-8 A.D.) of the ships built at Calicut—sambuks, kapels, etc., although he quotes the passage on p. 203.

A final quotation from Marco Polo shows how enormously valuable this trade with India was. After describing Zaitun (probably the modern Tsiuen-chau or Chin-chau near Amoy), the great port of arrival for ships from India, he adds:—"Hither is imported the most astonishing quantity of goods and of precious stones and pearls, and from there, they are distributed all over Manzi, and I assure you that for one shipload of pepper that goes to Alexandria or elsewhere, destined for Christendom, there come a hundred such, aye and more too, to this haven of Zaitun." [1]

It would seem that the commencement of regular sea-trade between China and India cannot date back earlier than the end of the fourth century A.D.[2] The first direct intercourse between China and Ceylon is ascribed to the early years of the Eastern Tsin dynasty (317-420). The earlier phase of this trade appears to have been conducted in Arab, Indian, and Sinhalese ships, which gave way in great measure to the larger Chinese junks as soon as the Chinese began to appreciate the great value of Indian merchandise. This probably took place under the great T'ang dynasty for the 300 years of their rule (618-907) was a period of great expansion and progress.

How and exactly when Chinese trading fleets ceased to frequent Indian seas is something of a mystery. We know that a Chinese fleet arrived in Ceylon in 1409 and deported the royal family to China and that tribute was paid regularly by Ceylon to China throughout the reign of Parakkāna Bahu Raja VI from 1410 to 1462. Nicolo Conti's description of the great trading ships seen by him in Indian seas in the earlier part of the 15th century is probably the latest surviving account of the oversea Chinese junk trade with India. Cont isays, however, that they were built by Indians, obviously an error in view of his detailed description of them *in almost the same words as Marco Polo*; he describes them as having five sails and as many masts, the lower part of the hull constructed of triple planks and some provided with watertight bulkheads.[3] Conti was a careless writer and I incline to think that he had Marco Polo's *Travels* before him when he wrote this. Probably, like Prof. Mukerji in recent times, he was led into this error by Polo's use of the term "Indian ships" already referred to above.

It is certain that no Chinese ships were in the Indian trade when the Portuguese arrived in India (1498); from Abd-er-Razzak's account of the trade of Calicut,[4] and his omission to refer to the Chinese junk trade, we may further infer that even as early as this, Chinese ships had ceased to come to India. His reference to the seafaring population of Calicut under the term China boys, indicates that Chinese influence could not have been severed for any considerable length of time.

We shall not be far wrong if we put the approximate date of the cessation of the Chinese junk trade with India at about 1424 A.D., a date which coincides with the

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[1] Yule, *loc. cit.*, p. 185. [2] Yule, *Cathay and the Way Thither*, I. 66, London, 1915.

[3] *India in the Fifteenth Century* (Hakluyt Society), Vol. II.

[4] *India in the Fifteenth Century, loc. cit.*, Vol. I.

end of the reign of Ch'eng Tsue of the Ming dynasty, a ruler noted for his aggressive overseas policy.[1]

To sum up the deductions obtained from an analysis of our knowledge of ancient sea-trade with India as derived from ancient sculptures and from classic and mediaeval writers, we find that:—

(*a*) Phœnician influence was negligible. We have no direct evidence whatever to support the view that the Phœnicians ever voyaged regularly to India or had trade settlements in India. There seems no basis for the idea of a busy Phœnician trade route to India either from a base in the Red Sea or the Persian Gulf. On the contrary the concentration of all their sea effort was directed to the westward—to go east involved enterprises strategically unsound. The weightiest fact against the supposition that the Phœnicians had vessels in eastern waters is that Solomon, Sennacherib and Alexander would have chartered such vessels for their use had there been any, instead of constructing new ones.

(*b*) The Egyptians certainly never went beyond the land of Punt in any of their eastward sea voyages, that is, they never passed east of Hadramaut or of Sokotra.

(*c*) The Babylonians and Assyrians were not a maritime people and the biggest ships they had, as shown in Sennacherib's records, were rowing galleys, usually unprovided with sails.

(*d*) The Greek and Græco-Roman traffic that flourished exceedingly between Egyptian Red Sea ports, Arabia Felix and the Indian coast, roughly from 200 B.C. to 200 A.D., and lingered on another two hundred years in ever decreasing importance, was of very great extent and value, requiring the employment of annual trading fleets. We have no information as to the kind of ships engaged in this traffic, and whether they were built and manned by Greeks or built and owned by Greeks and manned by Arabs. Probably the latter was the case—it is the more probable, and this would make it clear how and why the Arabs later came to dispute with Indians the carrying trade of the Arabian Sea, as had also been the case in the days prior to Greek maritime predominance.

(*e*) The Sabaean Arabs of Southern Arabia appear to share with Indians the honour of having been the earliest carriers on the waters of the Arabian Sea; it seems certain that this traffic was comparatively petty and restricted prior to the opening up of the East to European enterprise by Alexander's pioneering of the Persian Gulf route. With Rome's absorption of Egypt, direct trade between India and Egypt increased enormously and was, I believe, largely in the hands of Arabs employed by Greeks. Anyway, from the fall of Rome, the Red Sea and Persian Gulf trade was run solely by Arabs and Indians with a distinct tendency to pass into the hands of the former in the period immediately preceding the arrival of the Portuguese in India. With the decline of the Portuguese, Arab and Indian sea-trade again increased considerably and in the eighteenth and nineteenth centuries it was of great importance till the advent of steam-power in Indian seas reduced its scope enormously.

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[1] Yule, *Cathay*, I, 87.

(*f*) The Chinese entered the Indian trade at a very early date, probably not later than the fifth century A.D. The rise of their overseas connection with India seems to have synchronized with the collapse of Græco-Roman sea-trade and somewhat antedated the rise of modern Arab sea-power. From the fifth century onwards till the fifteenth they worked in co-operation with Arab and Indian traders, meeting and exchanging wares at Kayal, Quilon, Calicut, Deli, Broach, Diu, and even Karachi (Debal) on the south and west coasts of India, also westwards to the Euphrates and for some time even to Aden. Their ships were better designed, better equipped, larger and more seaworthy than those of the Arabs and Indians. Even before the coming of the Portuguese this trade appears to have been suddenly arrested. In the earlier centuries of this intercourse, the Chinese fleet went further east than in the later period, a consequence perhaps of the inferiority of Indian and Arab ships in early days. With the growth of the maritime power of the Arabs, the Chinese trade fleet ceased to go beyond the Malabar ports.

(*g*) Of Malay sea-trade with India we know extremely little. There is, however, some direct and much indirect evidence that intercommunication with Sumatra and Java was considerable from very early times but this appears to have been carried on in Indian craft, until the Arabs began to be ambitious of sea-power in distant waters. This will be further treated of in the next section.

PART III.—THE PART PLAYED BY INDIAN-BUILT SHIPS IN PAST SEA TRADE.

So far we have written as though India herself had been passive in regard to sea-trade to and from her ports—a looker-on upon the brave and venturesome doings of other nations and races. This is, I believe, only partially true, and arises from the fact that her own sea-traffic was in the main coastwise within her own boundaries and that what portion was oversea traffic was far more largely directed to the east than to the west. Greek and Græco-Roman traffic with India was restricted almost entirely to the west coast and as our only definite knowledge of ancient Indian trade is derived from Greek and Roman writers, Indian traffic with the Malay Archipelago and Peninsula failed to obtain adequate notice. There are, however, a few definite indications that there was considerable indigenous naval and mercantile activity in Indian waters at and from a very early date.

There are passages even in the Sanscrit epics, the Rāmayana and Mahābhārata, containing allusions to foreign maritime countries and to voyages thereto by sea, but these are vague and undateable, and merely tell us of the fact that several centuries B.C. sea-trade was known and carried on.

More definite are ancient Buddhist legends embodied in the Pitakas and Jātakas, particularly the latter, dating from the early centuries B.C.

Among the former the *Sutta Pitaka*, attributed by Rhys Davids [1] to the fifth century B.C., tells how long ago merchants when sailing on oversea voyages out of sight of land carried with them "shore-sighting" birds which were used in locating the nearest land when the ship's position became doubtful. The same custom is related by Pliny (A.D. 77) as practised by the seamen of Ceylon, when making sea voyages, as they were unable to steer by the stars.[2]

Another passage of this Pitaka [3] mentions voyages lasting for six months, made in ships which were brought ashore and laid up during the winter, a custom curiously similar to that practised to-day by the Sinhalese owners of the antique sewn-plank craft called *Yātra oruwa*. (See p. 158.)

Still more valuable is the evidence of the Jātakas which may go back as far as 400 B.C. but which enshrine folktales of much greater antiquity.[4] The most important in this respect is the *Bāberu-Jātaka* [5] wherein we read of Indian merchants who made periodical voyages to Babylon (Bāberu). The story as told, is dressed fantastically, but there can be little doubt that it has as its basis a tradition of a regular trade by

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[1] *J.R.A.S.* April, 1899, p. 432.
[2] Pliny, *Natural History*, VI. 22.
[3] Quoted by Mukerji, *loc. cit.*, p. 73.
[4] Kennedy, J., *J.R.A.S.*, 1898.
[5] *Jātakas*, Cambridge ed., 1907, III, p. 83.

sea between Western India and the Babylonian river towns, carried on by Indians and comprising peacocks as one of the articles of export from India.

That the peacock was exported from India at a very early date gains weight from the fact that the Hebrew word for peacock as used in the Old Testament, '*thuki*,' is immediately derived from the Tamil *tokei*, and that peacocks were common in Greece about 430 B.C.[1] This trade probably existed from much earlier times, for other old Jātakas make much mention of the sea-ports of Bharukaccha (Broach) and Surparaka (Supāra), and of long and perilous over-sea voyages made therefrom to distant lands —to Suvarnabhumi in particular, which appears to be that Further India, or Golden Chersonese, which we know as the Malay Peninsula, Sumatra and Java.

The discovery of Indian timber in the Babylonian ruins of Birs Nimroud and of Ur, in buildings dating *circa* 604-538 B.C.,[2] furnishes conclusive evidence of sea-trade conducted in fairly large vessels between India and the Euphrates at this early period.

This sea-trade with Babylon, carried on in Indian vessels, cannot be less ancient than the 6th century B.C. and is possibly a good deal older. Its continuance in Achaemenid times is rendered probable by the discovery of Indian articles in the ruins of Susa, these consisting of libation cups, bangles and ornaments made from the shell of the Indian conch, fished even yet in quantities on the Kathiawar coast.[4] The age of these ruins brings Indian trade with this region down into the 5th century, but some of the ornaments—one bangle especially, obtained from a lower stratum—belong probably to a much older date, as Susa was a capital of the Elamites long before the Achaemenid occupation of the site. I have also identified chank ornaments from Tello (the site of the ancient Lagash) in the Louvre Museum, Paris.

Contemporaneous with this Persian Gulf trade, commercial relations with the great emporia of Muza and Aden in S.W. Arabia were certainly being carried on. Probably the earliest distinct record of this is the notice of Agatharcides of Alexandria who, about the middle of the 2nd century B.C., saw large Indian vessels arriving at a Sabæan port from Patala on the Indus. He notes how wealthy the Sabæans had become by reason of their country being the exchange centre for the Indian goods so brought by sea. This direct Indian trade is confirmed by the story told by Eudoxus who himself twice voyaged to India towards the end of the 2nd century (118-112 B.C.), of an Indian ship found derelict off the entrance to the Red Sea with one famished Indian sailor alone alive. This man, brought to Egypt by the coastguard, subsequently offered to show the route to be followed on the voyage to India and acted as pilot for the first trading expedition under the leadership of Eudoxus.[4] Yemen at this period and for hundreds of years previously had occupied a highly favoured half-way position between India and Egypt, for it is doubtful if the direct passages of Græco-Egyptian vessels from Egypt to India commenced or at least were common prior to the first century B.C. Indo-Sabæan trade must be exceedingly ancient and

[1] Kennedy, J., *J.R.A.S.*, 1898.
[2] Do. *ibid.*, 1898.
[3] Hornell, J., *Marine Zoology of Okhamandal*, Pt. II, p. 2, London, 1916.
[4] Strabo, *Geog.* II. 3. 4.

it seems probable that it is even older than that with the Persian Gulf. In A.D. 70 it was still flourishing at Muza, though it would seem from the *Periplus* that most of the ships used were Arab-owned and manned. It is of importance here to note that while this author speaks of Arab shipmasters and common sailors thronging the port of Muza, his references to Indians are as merchants only:—"In bygone times when the merchants of India did not proceed to Egypt" and "the population of Sokotra consisted chiefly of foreigners, Arabs, Indians and even Greeks who resorted thither for the purpose of commerce."

But whereas the *Periplus* does not give any support to the theory that Indian ships traded between India and the Red Sea, he records definitely that Broach carried on a regular trade with Apologos at the head of the Persian Gulf, and with Omana, apparently a port on the coast of Persia, freighting large vessels with logs of sasamina and ebony, wood for rafters (teak?), sandalwood, copper and other commodities. He adds that Omana is a shipbuilding centre, exporting completed vessels called *madarata*,[1] to Arabia, meaning Hadramaut and Yemen. A similar trade exists now—Arab vessels carrying away timber from the Malabar coast to supply the needs of the many shipyards on the Arabian coasts.

The Gujarat coast at this period appears to have been the chief centre of Indian shipping activity, for besides describing the great trade of Broach, and the systematic pilotage arrangements whereby incoming ships were met at sea by Government pilot boats large and well-manned, called *trappaga* and *kotimba*,[2] and led safely through the shoals which obstructed the fairway to the port, in a subsequent passage the *Periplus* refers to Muziris (Cranganore), the pepper emporium of the Malabar coast, as frequented by ships from Ariake, whereby is meant Indian ships from Gujarat. Indian pirate ships are also mentioned as infesting the West Coast at this time, rendering the voyage to Muziris dangerous.

The West Coast from Sind to Mangalore has been the haunt of piracy from the earliest days of Indian shipping. Greeks, Romans, Arabs and Italians, from the first century B.C. to the coming of the Portuguese, all give their evidence that the inhabitants of that coast made a living by their depredations upon passing merchant craft. A particularly flagrant act of piracy committed by some Sind freebooters upon a ship[3] sent by the King of Ceylon to the Kalif Muwaiya (A.D. 661-679), was the direct cause of the invasion and conquest of Sind by the Arabs. Pirates presuppose trading ships and any people building and operating pirate vessels must be credited with at least sufficient skill to operate trading ships on the same coast; hence we may fairly infer, apart from other evidence leading to an identical conclusion, that from the time when Greek trading fleets appeared in Eastern waters until the present day, a great part of the coastwise traffic of India has been carried on in Indian bottoms—almost exclusively

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[1] Schoff, W. H. (*The Periplus of the Erythraean Sea* (translation), London, 1912, p. 154) quotes Glazer to the effect that this is the Arabic *muddarra'at*, meaning "fattened with palm fibre."

[2] Possibly we have in the latter word a form of the term *kotia*, now applied to ocean-going vessels showing Portuguese influence in their design, but owned largely in Kathiawar and Kutch.

[3] Eight ships according to the *Chach-nama* as quoted by Sir H. M. Elliot in his "*History of India*," 1867.

prior to about the 7th century; since then more or less shared by Arab-built or owned vessels.

That these pirate ships of the Konkan, South Kanara and Kathiawar were weatherly craft we may infer from Marco Polo's description of the way in which the Konkan and Gujarat pirates scoured these seas with more than one hundred small vessels, seizing and plundering all the merchant ships that passed that way. He adds that their wives and children of all ages accompanied them aboard the ships, so we may infer that they afforded considerable accommodation. At the present day the crews of the larger fishing boats, descendants of these old pirates, continue the tradition by staying at sea, often for a week or a fortnight without coming ashore.

Neither was the maritime activity of Broach always peaceful; the *Periplus* records that the authorities endeavoured to break the trade of rival ports on the Bombay coast by means of blockade, and by towing away foreign ships making for those ports.

So much for the sea trade of the Western Coast of India—knowledge meagre and scanty and amounting to little more than an assurance that Indian ships, manned by Indians, did share with Arab ships in the trade between India and the Persian Gulf, and with Aden and the East Coast of Africa, from very early days, and that a well-developed coasting trade, in spite of harassment by local pirates, was carried on by Indian ships between West Coast ports. This trade was exactly upon the lines of present-day sea-commerce as carried on by Indian merchants in vessels built and manned in India—proof of the conservatism of commerce as well as of its antiquity.

Sea-trade upon the East Coast never became well known to the Alexandrian Greeks or to the Romans; on the other hand much more information upon this aspect of ancient Indian enterprise is contained in Indian inscriptions and documents, and proved in indirect ways, than in the case of the West Coast trade. Thus the records of Indian and Sinhalese dynasties frequently record naval expeditions against overseas nations. Vijaya and his followers, the founders of the ruling section of the Sinhalese nation, are reputed to have reached Ceylon about 550 B.C. from some port at the head of the Bay of Bengal, and for centuries thereafter Sinhalese chronicles and South Indian inscriptions testify to the frequent invasions of Ceylon by Chola and Pandyan armies, and even to occasional counter-invasions of South India by Sinhalese. Boats of considerable size must have been employed, as mounted troops are mentioned; horses, elephants, and chariots also passed as marriage dowries between the Royal Houses of South India and Ceylon.[1] So far as we know, the Indian ports of departure were chiefly on the Tanjore and Ramnad coast of Palk Strait. Kaveripattanam on the Coromandel coast was then at the height of its fame. Both Greek and Tamil writers mention it, and have much to say of its sea-borne commerce. The *Periplus* is the most definite; here towards the end of the narrative after speaking of Kolkoi (the Pandyan city of Korkai) and of the pearl fishery coast on the Gulf of Mannar, we are told:—

[1] *Mahawamsa*, 1889 Edition, p. 34.

"Among the marts and anchorages along this shore to which merchants from Damirike[1] (Malabar Coast) and the north resort, the most conspicuous are Kamara (Kaveripattanam), Podukê and Sopatma,[2] which occur in the order in which we have named them. In these marts are found those native vessels for coasting voyages which trade as far as Damirike and another kind called *Sangara*, 'monoxyla' of the largest sort, and also others called *Kolandiophonta* which are of great bulk and employed for voyages to the Ganges and Khruse" (Golden Chersonese or Malay Peninsula.)[3]

Besides these references we have records of the invasion by sea (*circa* 1025 A.D.) of the Burmese coast by South Indian (Chola) powers and it is certain that Indian kings during the early centuries of our era carried their arms by sea to the coasts of Sumatra and Java, where indeed a peaceful Indian penetration had begun probably some centuries B.C. Particularly marked was the extension of Indian commerce in the time of Chandragupta, a great warrior statesman brought to the front by the impact of Europe upon India. It is even probable that he was of the Persian royal family as Dr. Spooner has argued, and Greek influence may have had much to do with the energy he infused into the commercial intercourse of India with the outer world. In his day great progress was made in traffic with the far east and it is probable that even then (316–292 B.C.) Hindus began to found settlements in Java, Siam and Cambodia, and to introduce Brahmanism into those countries. Trade with Chavakam, meaning Sumatra and Java, is alluded to frequently in several of the very old Tamil poems quoted by Kanakasabhai Pillai in his *Tamils 1800 years ago*. The early Arab writers indeed considered Sumatra and Java as being part of India.[4] Abu Zaid (*c.* 916 A.D.) relates a story of an old invasion of the Pandyan country by the Maharaja of Java—incidentally mentioning that it was about 10 days' sail between the two kingdoms, "but when the wind is light the journey may take as much as 20 days."

The frequent references to countries on the nothern and eastern shores of the Bay of Bengal and to Java and Sumatra further east, in the oldest classical writers of South India, show very clearly that intercommunication was easier and more frequent than we usually realize, and this infers fairly large and seaworthy vessels.

From very early days trade between Ceylon and Bengal was important. The chank bangles esteemed so necessary by Hindu ladies in Bengal were obtained entirely from the South Indian and Ceylon fisheries and the muslins of Bengal returned in exchange. Fa Hian, the Chinese Buddhist who travelled in India betwen 399 and 414 A.D., is one of the first writers who specifically mention this Bengal mercantile shipping in ancient days; in a passage describing his pilgrimage to see the Buddhist

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[1] I adopt Damirike in place of the Limurike of the MSS. as suggested by Rawlinson, *loc. cit.*, p. 120.

[2] Podukê may be Pondicherry (Puducheri) as suggested by other authors, but I believe Rawlinson is in error in identifying Sopatma with Madras. It is more likely to be represented by the now decayed port of Kistnapatam further north.

[3] Probably *sangara* were double-canoes (*sangādam*, Tamil), while *kolandiophonta*, or *kolandia* as Schoff prefers to call them, were possibly outrigger ships. See p 215 for a discussion of this question.

[4] As instance Al Masudi, who died 956 A.D. Sumatra was usually confounded with Java under the name Zabaj.

relics in the possession of the Sinhalese, he relates how he sailed from the mouth of the Ganges to Ceylon in "a great merchant ship." In 673 this port, Tamralipta or Tamluk, near the modern Midnapore, was found still prosperous by the later pilgrim I-Tsing, who there embarked when returning to China.

In the sixth century we get considerable light upon the mercantile importance of Ceylon in the writings of that much travelled Alexandrian monk, Kosmas Indicopleustes,[1] who wrote about 535 A.D. To quote his own words: "As the position of Ceylon is central, the island is a great resort of ships from all parts of India, and from Persia and Ethiopia, and in like manner it despatches many of its own to foreign ports. And from the inner countries, I mean China and other marts in that direction, it receives silk, aloes, clovewood, sandalwood, and their other products, and these it again passes on to the outer ports, I mean to Malabar where pepper grows and to Kalliana (near Bombay) where copper is produced ..... and to Sindu also and to Persia and the Homerite country (S. Arabia) and to Adule" (Abyssinia).

The connection between the country known in ancient days as Kalinga—the land stretching from the Godaveri to Ganjam—and the opposite coast of the Malay Peninsula has always been great. The only good harbour on the Ganjam coast is called Kalingapatam, and the port of Coringa (apparently etymologically identical with Kalinga) has long been the greatest shipbuilding centre on the East Coast so far as we have definite information. From the former port in particular emigration has been active from time immemorial, hence it is easy to understand why the name of Klings is universally given to people of Indian race in the Malay Peninsula, whether they be the descendants of old settlers who doubtless did come from Kalinga or whether they are newly arrived immigrants from parts far distant from that locality. In the same way Lower Burma or Pegu being conquered by emigrants from Telingana, the land of the Telugus, comprising the coast region from Madras to the southern border of Ganjam, the people of Pegu were long known to the Burmese and to all foreigners as Talaings.[2]

It follows therefore that the most conclusive proof of the high development of purely Indian overseas trade in ancient times is afforded by the great colonizing epoch of the first seven centuries of our era. Within this period, at ill-determined dates, several waves of colonizing energy carried large bodies of Indians from the north-western shores of the Bay of Bengal, Telugus or Talaings from Telingana, Klings from Kalinga, and a Magadha element from Bengal, to Pegu and the Tenasserim coast, to parts of Sumatra, to Java and to Cambodia. The written records have gone, tradition is scanty and unreliable, but stone monuments remain in plenty and in unrivalled magnificence that bear silent witness to Indian inspiration and workmanship. The colonists appear to have represented the three chief phases of Indian religious feeling; Brahmanism, the oldest, was succeeded by Buddhism, made vivid to us in the wonderful sculptures of Boro Budur; this latter religion, once predominant in Java, gave

[1] *Christian Topography*, 11th Book.

[2] Phayre, *History of Burma*. It may also be noted that the Telingana and Kalinga coastal limits largely overlap and represent almost the same region. The latter term is the older. It represents the name of an ancient kingdom whereas Telingana is a racial term indicating the area occupied by the Telugu branch of the Dravidian race.

place in turn to modern Hinduism, which lasted in strength till late in the 15th century, and still flourishes in Bali and lingers in out-of-the-way villages in East Java.

Javanese tradition traces this Indian colonization back to 75 A.D., Indian influence and intercourse being certainly much older, dating back at least to Asoka's days. However unreliable this date of the first Indian colonization may be, it represents a time which approximates to the probabilities, for the Chinese pilgrim Fa Hien at the beginning of the 5th century found a large Indian population in Java, and sailed in ships upon this memorable voyage with crews professing Brahmanism,[1] whilst his successor, I-Tsing, about 673, mentions more than ten prosperous Indian colonies in Sumatra, Java, Borneo, Bali, etc.

The leader of the first legendary arrival of Indian colonists in A.D. 75 is said by the Javanese to have borne the name Adi or Aji Saka and in this it is possible that we have a vague record of the activities of the great Asoka, who in 244 B.C. commenced that wonderful Buddhist propaganda which spread Buddhism far and wide through India, Ceylon and the whole south-east of Asia. As Mr. V. A. Smith remarks, "when we remember Asoka's relations with Ceylon and even more distant powers, we may credit him with a sea-going fleet as well as an army".[2]

In this connection Mukerji's quotation[3] of a passage from a Kashmir work of the 10th century, preserves a very interesting tradition of Indian trade with the island powers of the east in Asoka's times. From it we gather that certain Indian traders had been attacked in their voyaging by Naga pirates who plundered and destroyed their ships. In the steps taken by Asoka to exact redress it is not unlikely that we have a far-off echo of a maritime punitive expedition against Malay or Malayo-Polynesian pirates.

Whatever may be the truth of the Javanese legends, it is, as we have seen, certain that Indian emigrants landed in considerable numbers in Java and Sumatra long prior to the 5th century. For this century and the beginning of the seventh, Javanese tradition is very definite regarding large arrivals from India. In regard to the latter immigration, the legends aver that in 603, a Gujarat ruler, forewarned of the coming destruction of his kingdom, sent his son with 5,000 followers in 6 large and 100 small vessels to Java, who were reinforced later by over 2,000 more men, including numerous skilled artisans.[4] Many critics deride this story which they characterise as baseless; they point to the belief that the bulk of the Javanese colonization was from the Kalinga and the Orissa coasts and emphasize the improbability of settlers arriving from the far western coast of India. These objections, I incline to think, are not necessarily conclusive. For centuries Java was the El Dorado of India where the adventurous, the ambitious, the rebellious, and the discontented sought power or wealth or refuge, standing in relation to India as the colonies have done to Britain for three centuries and more. Given these motives there is no insuperable or even considerable difficulty in the voyaging of large numbers of emigrants from

[1] He lamented "In this country (Java) heretics and Brahmans flourish, but the law of Buddha hardly deserves mentioning."

[2] *Edicts of Asoka*, p. viii. [3] Mukerji, R., *Indian Shipping*, p 114. [4] Raffles, Sir S., *History of Java*, II, 82.

Gujarat to Java in the 7th century. The Chinese were at that time regularly trading to Gujarat and the Red Sea, and Arab trade with the Malay Archipelago and with China was also considerable. With these two streams of foreign traffic passing Indian ports, the coast people of Gujarat would be early familiarized with stories of the wealth of the Indian colonies in Java and Sumatra, and what more likely than that the adventurous among them, *provided as they were with the best-built sea-craft of any in India*, would themselves desire to take part in the rush to the Isles; finding the reports true, if political conditions were threatening at home, is it not probable that Gujarat should take a share, belated though it might be, in the colonization of the Malay Isles?

Can there be an echo of this in the quotation in *Hobson Jobson* (1903 edn.)?—

> "There is a saying in Goozerat,—
> Who goes to Java
> never returns.
> If by chance he return,
> Then for two generations to live upon,
> Money enough he brings back."
> (1856. *Râs Mâlâ*, ii, 82).

Before we can understand the full significance of the Indian colonization of Java and the neighbouring lands, we must force ourselves to realize as vividly as possible that there was infinitely more movement in Asia during the first thousand years of our era than there is now. Many Governments were unstable and every ambitious prince dreamed of subduing his neighbours; out of this welter ever and again emerged a great warrior at the head of conquering hordes who spread terror and unrest far beyond the limits of his operations. Fugitive populations pressed upon adjoining lands, and this impetus once imparted, reacted again and again till it reached coast lands and excited the more adventurous to seek happier homes in new countries. Such forces as these sent multitudes of Indians to Java and Sumatra and to Cambodia, where the early comers quickly founded prosperous states and became so powerful and wealthy that the fame thereof brought new accessions of colonists, this time principally craftsmen—builders in stone, expert sculptors, workers in metal and in wood.

A fact which lends some support to the Javanese claim to early intercourse with Gujarat is that the Portuguese on reaching Malacca in 1509, found the trade with India largely in the hands of merchants from Gujarat.[1]

[1] Stephens, H. M., "Albuquerque," in *Rulers of India* series, p. 96, Oxford, 1892.

PART IV.—THE CLASSES OF VESSELS EMPLOYED BY INDIANS IN ANCIENT DAYS PRIOR TO PORTUGUESE MARITIME DOMINANCE.

Until we come to the days of Marco Polo and Ibn Batuta I know of no technical descriptions of the boats and ships used on the Indian coasts, except one by Pliny and the involved and difficult passage in the *Periplus* already quoted, where two Indian trading vessels called respectively *sangara* and *kolandiophonta* are mentioned, the former being large 'monoxyla,' which means literally that each vessel was formed from complete logs and not constructed of planks. I agree with Schoff [1] in correlating the name with the Tamil *sangādam*, a double-canoe made from two great hollowed out tree trunks lashed together, in spite of the fact that this type of craft is never used nowadays for sea-going purposes, being restricted to rivers, estuaries and back-waters. The word, as well as the use of this form of canoe, is found throughout Dravidia; on the Malabar coast the term appears as *changādam*, in Kanara as *jangāla*. The Polynesians when first seen by European voyagers employed sea-going double canoes of large size; to-day few exist and these of small dimensions only, the large ones being replaced by schooners of European design. If, as I believe, there is an infusion of Polynesian blood in the coastal population of South India, we can the more readily agree with the view that large double-canoes were employed in trade on the Coromandel coast at the time of the *Periplus*. The only alternative to this view is to consider the monoxlya making up a *sangara*, as the constituent logs of a catamaran. But catamarans are never used as cargo carriers; they are exclusively fishing boats and this fact excludes them from identification with the description of them in the *Periplus* as "large vessels."

Kolandiophonta or *kolandia* as rendered probably more correctly by Schoff, described as vessels of great bulk employed for overseas voyages to Bengal and Malaysia (Chryse), must almost certainly have been two-masted vessels with pointed ends and probably equipped with a stout outrigger, counterparts of the present-day Sinhalese *yatra-oruwa* (*yatra-dhoni* in Tamil), but, unlike them, steered by quarter oars, the rudder not being then invented. I come to this conclusion partly because *kolandia* appears to be a Greek sailor's rendering of the word *kūllan* or *kūlla*, the Tamil term both for a large outrigger fishing canoe and for the outrigger frame alone (*kūllān*, the more correct and older form becomes shortened to *kūlla* in the corrupt speech of Tamil fishermen), and partly from Pliny's account of the ships used in the seas between India and Ceylon.

It is indeed a strange coincidence that this view of *kolandia* being outrigger vessels should receive valuable support from Pliny, who says, "the sea between the

[1] *Loc. cit.*, p. 243.

island of Ceylon and India is full of shallows not more than six paces in depth, but in some channels so deep that no anchors can find the bottom. For this reason ships are built with prows at each end, for turning about in channels of extreme narrowness."[1]

Now the large single outrigger type of canoe, called *kūllān* or *kūlla* in Tamil, used universally by Sinhalese fishermen at the present day, in common with several Polynesian varieties of the same general design, is notable among our local boats for this same strange peculiarity. In such craft the single outrigger must be always upon the weather side to exercise the counterpoise needful to prevent capsizing through the thrust to leeward of the wind upon the sail. The heavy outrigger of these large canoes cannot be changed at sea from one side to another, as it has to be permanently secured on one side; whenever the wind changes in direction or a course contrary to the one preceding has to be steered, the difficulty involved is overcome by moving the steering paddle to the opposite end of the boat, thus changing what was before the bow into the stern. By this means the outrigger float remains on the weather side.[2] From this fact I identify Pliny's "ships with prows at each end" with outrigger vessels closely akin in form to the *yatra dhoni* of the present-day Ceylon coasting trade and with the *kolandia* of the *Periplus*.

The reason given for these boats having reversible ends is, of course, wrong, but this is immaterial.

The *kolandia* of the first century probably had also fairly close kinship with the two-masted Javanese outrigger ships of the Boro Budur sculptures (*circa* 8th or 9th century) seeing that the *Periplus* distinctly states that the *kolandia* traded to Chryse, generally identified with the Malay Peninsula; the islands of Sumatra and Java, where Indian missionaries were at that early period already busy spreading Indian religion and prestige, were undoubtedly included in this region of the Golden Chersonese.

It is somewhat curious that no descriptions of sea-going vessels appear to have survived in the Tamil classics; all that Bishop Caldwell could say was that at a very early date, besides "canoes" and "boats," the Dravidians had "ships" in the sense of small-decked coasting vessels.

Thanks, however, to the *Periplus* and to Pliny, we do possess evidence that they had in addition oversea trading vessels and that some of these were probably outrigger ships. That other large ships, most likely from more northern sections of the east coast of India, were without outriggers, either then or at a date not much later, is certain from the fact that various Andhra and Kurumbar coins bear rude but unmistakable representations of two-masted ships without outriggers; all appear pointed at both ends, and were steered by a quarter oar on each side.[3]

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[1] Pliny, VI, 22, M'Crindle's translation.

[2] Pitt-Rivers states that this system is also pursued in Fiji, in parts of New Guinea, and, northward, in the Kingsmill Islands. *The Evolution of Culture and other Essays*, Oxford, 1906, p. 222.

[3] Schoff, *loc. cit.*, p. 243, states that these coin ships present points of detail resembling those of "the Gujarāti ships of Borobœdor." In reality, the converse is the case. The Indian ships have pole masts, the sails are without

From Marco Polo's account of the Arab vessels at Ormuz, it is clear that these were much more like the Laccadive Island boats than the Arab carrying craft of the present day as represented in the baggalas, dhangis and gunjos of the Persian Gulf and West Coast of India. These latter mostly have two masts and all are put together with iron bolts and have the bottom pitched. Marco Polo specially notes that the Arab ships seen by him at Ormuz (*c.*1272 and 1291) had but one mast, one sail, one rudder and no permanent deck and that the planks were sewn together with coir yarn, the bottom being smeared with fish oil but not pitched.[1] Such is essentially the structure of the Laccadive boats, though these show such improvements as a covered-in poop and the frequent employment of a small mizzen mast. Marco Polo also remarks that they had no iron anchors. This traveller having had intimate experience of the magnificent junks built by the Chinese, which, even then, boasted the employment of numerous watertight compartments separated by transverse bulkheads, were four or six masted, had numerous sails and accommodated wealthy passengers in commodious state-rooms, thought poorly of the vessels built by the Ormuz Arabs. He says they were of the worst kind, and dangerous for navigation, their defects proceeding from the fact that nails were not employed in their construction. This poor opinion must have been due largely to prejudice for such boats are still used successfully and do not seem to be more dangerous than ironbolted vessels. In certain circumstances they have even considerable advantage and Ibn Batuta was right when he wrote (A.D. *circa* 1340) that "the ships of India and Yemen being sewn together with coir thread, when they happen to strike against a rock, the thread will yield a little but will not soon break, contrary to what happens when put together with iron nails."[2]

Marco Polo states that in these vessels after taking in their lading, this is covered over with hides, whereon they place the horses which they carry to India—a statement bespeaking their large size.

We see from the above that the Indian and Arab vessels of the Persian Gulf and the West Coast of India at the end of the thirteenth century were large enough to carry considerable cargo together with a number of horses; they were apparently much like a single-masted pattimar of the present day but differed from the baggala in having no high poop; it is likely that they were round or sharp sterned and it is probable that they had already adopted the lateen rig ("one mast and one sail," Marco Polo, *ut supra*).

This general form appears to have been prevalent on the West Coast from time immemorial and probably originated from the habit still seen at Ratnagiri and the neighbouring coast of making even fairly large boats out of dug-out canoes by adding flared side or wash-boards, one above the other, to the edges of the dug-out. The added planks were originally sewn edge to edge as in Laccadive boats, the out-

booms and no outrigger is present; those of Boro Budur show twin-masts, the sails have booms as well as yards, and outriggers, often with multiple booms, are a characteristic feature. Neither has Schoff any justification for calling them Gujarati ships; they were local Javanese vessels, with lineal descendants of smaller size still surviving in the coasting trade of East Java.

[1] Yule's edition, Vol. I, p 102, 1871.

[2] *The Travels of Ibn Batuta*, Lee's translation, p. 178, London, 1829.

rigger dhonis of Ceylon, and the masula boats of the East Coast. When larger boats become necessary, the model of the built-up dug-out was followed and this design is now seen in the round-sterned pattamars of the present day. Such boats being beamy had no need for a steadying outrigger.

In the extreme south of India and in Ceylon, a different basal design appears to have existed for cargo carriers. In this area the boats employed for transport work, as apart from catamarans which are solely fishing craft, appear undoubtedly to have been of two kinds, either true single outrigger vessels of the Polynesian type, or the modified balance-board design which has been evolved therefrom. Both of these types

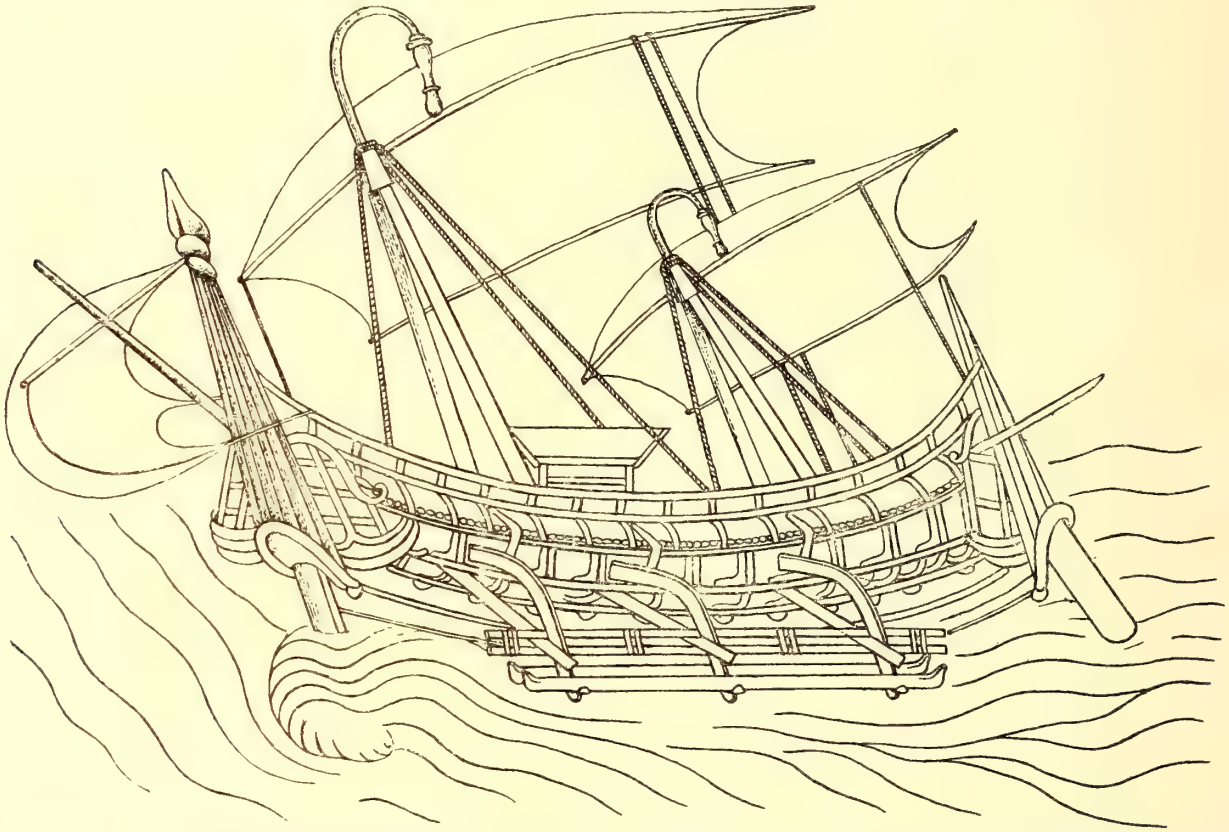

FIG. 28.—A large Javanese outrigger ship of 8th or 9th century A.D., showing the double form of mast and the quarter steering oar in a trunkway. Restored from the Boro Budur sculptures, Java. (Original.)

are still to be found in Palk Strait and on the coast of Ceylon, the former running to 50 to 70 tons capacity, the latter to about 30 tons. The true outrigger type is by far the more numerous and the more widely dispersed in India, as I have seen canoes and boats of this construction at frequent intervals from Sind in the north-west, down the Bombay coast to Mangalore and again from Ceylon in the south to Cuddalore and Kille (Cauveri River) on the East Coast. The balance-board modification I know in two localities only—the one being Palk Bay, the other the vicinity of Cocanada (Kalinga coast).

Very significant in this connection is the fact that several of the sculptured

friezes on the great Buddhist shrine of Boro Budur (*i.e.* "Great Buddha") in Java, erected in the eighth or ninth century, show large two-masted vessels provided with a massive outrigger formed of a compound float, held in position by either three or four stout booms [1] (fig. 28). As Boro Budur was built by Indians or under the direction of Indian rulers, architects, and foremen, these sculptured representations go far to substantiate the view I take, based upon the many disconnected survivals of the outrigger design on Indian coasts, that certain of the ancient trading vessels of South India and Ceylon were furnished with outriggers; that the Ceylon sewn-plank outrigger coasting dhoni, and the Point Calimere kalla dhoni, represent survival modifications of the original type of South Indian trading vessel in use when sea-trade first arose.

At the same time I agree with Mr. R. D. Banerji [2] that the Boro Budur ship scenes cannot be accepted as representing the emigration of Indian colonists to Java. They undoubtedly represent incidents in the life of the Buddha and what they do show is the type of Javanese ship familiar to the Boro Budur sculptors. A large square sail is carried on each mast, while from the bowsprit is hung a square artemon or spritsail. In the smaller vessels, a large steering oar is hung on the port quarter; there must have been a corresponding one on the starboard side. The larger two-masted type shows the rudder passing upwards into a trunkway such as the Chinese use in their junks; it has the appearance of being set laterally, hence it would seem that these vessels used two separate rudders precisely as the large Malay praus to be seen in Macassar harbour have at the present day. In these latter, as I had the opportunity of seeing recently, there is an opening or window in each quarter, considerably below the poop deck, which provide the steersmen with access to the two large rudders—one on each side. The Boro Budur ships customarily show a steersman clinging to the upper portion of the rudder blade—a conventionalism similar to that which represents a sailor working his way along the bowsprit.

In some (fig. 29), the simpler quarter rudder is retained, apparently held in position by rudder bands as seen in representations of Roman cargo ships.

The superstructure above the waterline appears to be built outboard beyond the sides of the hull proper, similarly, but far more developed, to that seen in many Macassar praus. To obtain lightness, this superstructure was built with the wales separated by spaces—openwork bulwarks which in the largest Boro Budur ships suggest "basket-work." The smaller vessels lack this or show only a few added open wales of quite ordinary dimensions and pattern.

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[1] No Indian or Sinhalese outrigger boats have more than one float supported by two booms, and the same design is characteristic of the outlying Polynesian islands; multiple booms, three and four most commonly but occasionally as many as ten and used in combination with a float on each side are still frequent in the Celebes, Moluccas, and Melanesia. The size of Polynesian outrigger canoes is now much smaller than in pre-European days, the large sizes having been supplanted by island-built schooners. In the Marshall Islands and elsewhere outrigger canoes of 60 to 70 feet in length are said to have been common prior to the advent of the white man, and long distances were travelled in them, many families taking passage. For an interesting account of Polynesian outriggers see *Notes on the Boats, Apparatus and Fishing Methods of the South Seas*, by A. B. Alexander, in the Report of the U.S. Fish Commission for the year 1901, Washington, 1902.

[2] *The Modern Review*, Calcutta, August, 1917.

A point of much importance in these representations is that the masts are compound, being double or twin in form; they consist of two spars stepped some feet apart, but inclined so that their upper ends eventually meet. So far as we know this design has never been used in India, but the double mast is in use in Burma, while a variant in the form of a tripod still persists in the Celebes and Moluccas. Some sculptures have numerous rungs or cross-bars attached, such as are seen to-day in the big Macassar praus and in up-county Burmese lighters on the Irrawaddy. The simple ∧-form is noteworthy as the mast design seen in ancient Egyptian ships from the 3rd to the 11th dynasties.

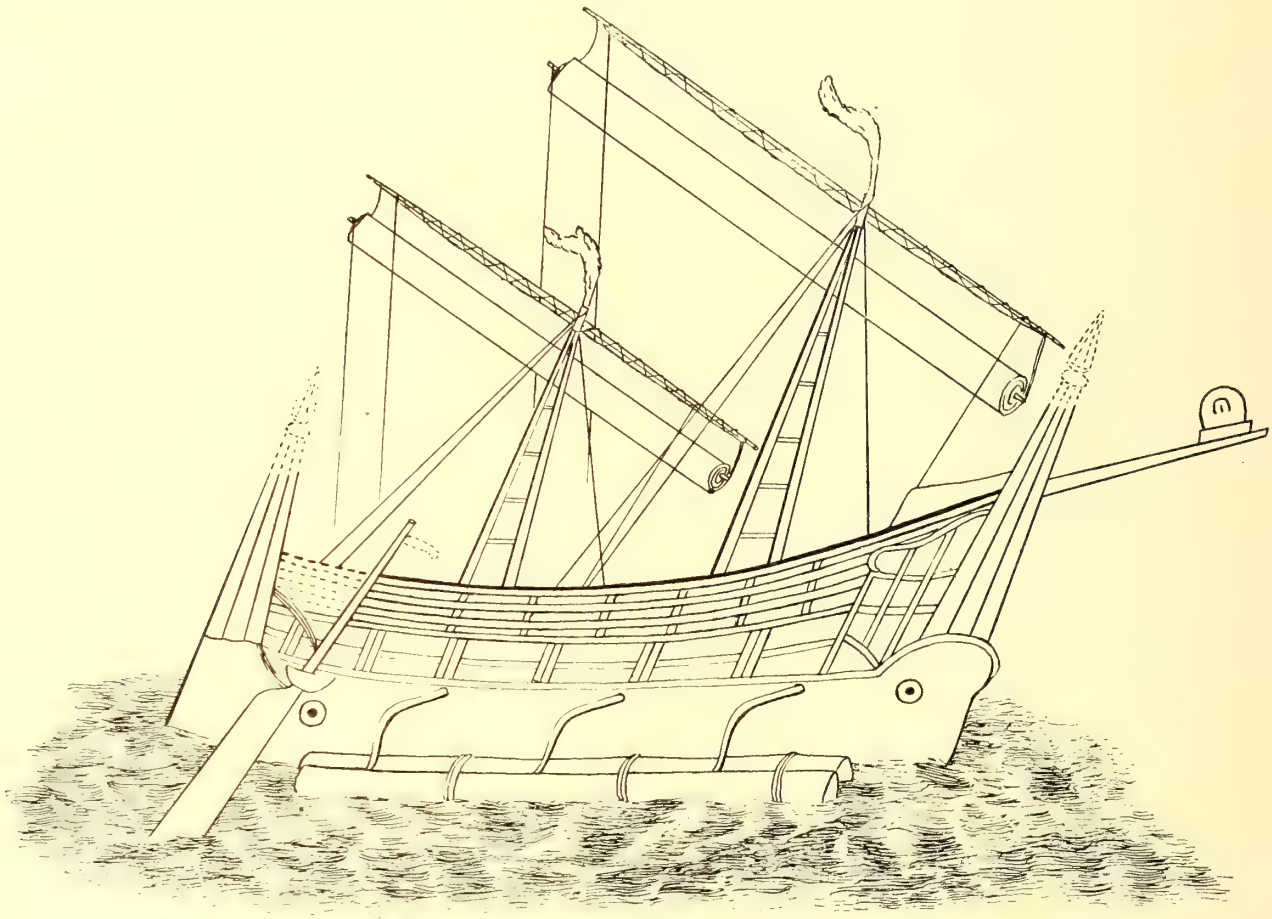

FIG. 29.—Restoration of a small Javanese outrigger ship of about 8th or 9th century A.D. From the Boro Budur sculptures, Java. (Original).

This peculiar compound mast (now indicated for the first time) together with the two rudders set in trunkways, are the weightiest arguments I know against the inference that the Boro Budur scenes referred to, depict the arrival of Indian ships in Java.[1] I can find no survival or suggestion anywhere of compound masts or of rudder trunkways having ever been used on the Indian Coast. Very important evidence on the former point is furnished by the ship-coins of the Andhras, dating

[1] Rawlinson's frontispiece "A Hindu ship arriving at Java" and Mukerji's similar one entitled "Indian adventurers sailing out to colonize Java."

back to the second and third centuries A.D., whereon are depicted two-masted ships with straight masts showing no trace of being either double or tripod in form. On the other hand, neither do these representations of ships show any suggestion of an outrigger or even of a balance board. They are ordinary round ships, two-masted, carrying yards triced to the mast-heads in such a way that it is clear they carried a large square-sail on each mast. Bow and stern were both raked and they were steered by means of two quarter-paddles, though in some only the paddle on one side is shown.[1]

I am inclined to think that the Andhra sea-going ships and those fitted out from the Kalinga and Orissa coasts in the early centuries A.D. were square-rigged, two masted vessels, with raked stem, and stern, both sharp, without bowsprit and rudder, and steered by two quarter paddles. It was in vessels of this description I believe, that the first Indian colonists set sail for the Malay Archipelago. Subsequently when the upper west coast of India began to send out swarms of colonists (if it ever did) and when trade with Ceylon and the south-east coast assumed importance some of the vessels used may have had outriggers as in the Boro Budur ships, the Ceylon *yatra dhonis* and the Konkan fishing boats of the present day. The combination of compound masts with a powerful outrigger (the latter now very seldom seen in Javanese cargo craft), and with the rudders set in trunkways, which we see in the larger ships of the Boro Budur friezes, must have been of local evolution, perfected by the Javanese in later years, as Boro Budur though began presumably in the 7th or 8th century was not completed probably till the 10th, some hundreds of years after the active period of Indian colonization. This peculiar design combined three essentially present-day Malaysian features—the double outrigger, the compound mast and the system of double rudders. Compound masts are essentially Mongoloid in origin, being seen to-day only among the Burmese, the Indonesians and the Southern Chinese.

On the west coast of India it is probable that the employment of the outrigger for coasting vessels was discarded at a comparatively early period, due, I believe, to the influence exerted upon this coast by foreign seamen from the Persian Gulf and the Red Sea; on the less accessible south-eastern coast, foreign influence did not become strong till some short time prior to the coming of the Portuguese, hence the outrigger type prevailed there as the common design till long after the conversion of Java to Buddhism. With the coming of the Arabs and still more quickly after the arrival of the Portuguese, the outrigger cargo-carrier began to decline, till now we find a mere handful of boats of this design engaged in trade. These few are rapidly disappearing and it is probable that none will exist twenty years from now. Twelve years ago the Ceylon outrigger cargo boats were familiar to me as they passed up and down the coast near the Ceylon pearl-banks; to-day few seem to know of their existence.

As the single outrigger and balance-board designs are both Polynesian in affinity, from the general diffusion of one or the other on both our Indian coasts, the only sane conclusion we can come to is either that some of the coast folk of India are

[1] Rea, A., "South Indian Buddhist Antiquities," *Archæol. Surv. India*, New Imp. Ser., Vol XV, p. 29.

closely kindred to certain of the races of Oceania, or (much less probably) that there has been such intimate and extensive trade relations between India on the one hand and Polynesia on the other, that the latter region imposed its boat designs upon India.

As regards the latter possibility, we have already seen that within the historic period the flow of population has been almost entirely from India to the Further East and that even so, it has been restricted entirely to Malaysia so far as the island world is concerned—never to the regions further east. Even for the former restricted area there is little or no evidence of any reciprocal influence upon India, with the one probable exception of a very limited Malaysian wave of immigration *viâ* Ceylon, which brought coconut cultivation, toddy tapping, and possibly betel chewing, to India from the Malay Archipelago. The Shanars, Izhuvans and Tiyyans of South India probably owe their presence to such immigration. The anthropological facts (p. 234) in regard particularly to the Shanars, give distinct support to this conclusion.

To-day, however, we find very few Malay words in common use on the Indian coasts, whereas a very large number of words of Indian origin, the great majority being traceable to Sanscrit and a less number to Dravidian languages, have gained admission in varying degree to the languages of Malaysia. The Indian immigrants into Sumatra and Java were of infinitely higher civilization than the inhabitants they found there—no record of pre-Hindu culture exists, and from all we now know, we judge that the aborigines were animists with rude customs and habits. Hence the civilization of the newcomers from India had no difficulty in asserting its supremacy and with the spread of the new and higher religion, the tongue of the sacred Indian writings rapidly influenced the language of those of the natives admitted to social intercourse with the Indian immigrants, who formed in addition alliances with the influential families of the land.

In this connection it is significant that the Malay term for a large ship, *kapal*, has been borrowed from the Dravidian (Tamil கப்பல்). The Malay of the Straits and the Tamil of India and Ceylon alike use this word for a large or sea-going vessel. Conversely the names for small boats used for fishing and inshore purposes are wholly different in Malay and in Tamil. From this we infer that the first large over-seas vessels seen by the Malays were Dravidian ships from South India.

The modern boat design of the west coast of India as exemplified in the sharp or round-sterned pattamar, is, I believe, as stated above, a local development of the spread dugout. So, we arrive at the broad conclusion that till quite recent times all the evidence available points to Polynesian influence being the only outside one that affected Indian sea-craft to any appreciable and permanent extent prior to the 16th century, excepting always the catamaran, whereof the primal origin is to be sought in the reed-rafts of Egypt and Chaldea.

In regard to inland boat designs we are on a wholly different footing. The types seen on the great rivers of India fall into two distinct classes, the first and larger group having distinctly Egyptian affinities, the other with equally well-marked Babylonian relationship. The former is by far the more marked and emphatic; no

one seeing a crowd of Hoogly dinghis, if he has any acquaintance with Egyptian paintings and remains, can fail to be struck by the similarity between the Indian design and that of the ancient small boats of the Nile. Indeed the Ganges to-day in respect of the craft covering her waters, presents a scene much more like that common on the Nile in the days of the Pharoahs than is its present-day aspect. We have the same multitude of high-sterned, low-prowed boats steered by a single paddle at the stern, while in larger craft we have the same design carried out on a greater scale, the high curved stern retained while the forward part is kept low to permit the use of oars. The Egyptian square sail is conserved and, most remarkable of all, in the great river cargo boats of the Ganges many of them retain the primitive quarter steering paddle favoured in ancient Egypt, and in both the shaft of the paddle is provided with a cross bar or tiller at one side, some distance from the end, for its easier manipulation by the steersman. Figures 26 and 27 show the identity of the idea involved as practised by the ancient Egyptians and the river-men of Bengal. In cases where a rudder is used in the larger boats, it assumes the balanced form in which a considerable portion of the blade is placed forward of the turning axis exactly as in the fixed quarter steering paddle from which it is evidently evolved.

A still older form of rudder is seen on the upper Indus; there the larger river craft are usually steered by an extremely long oar over the centre of the stern. In this we have a survival of an Egyptian practice in use in the time of the Twelfth Dynasty and for some time preceding. Models showing this point clearly have been found by Prof. Flinders Petrie in tombs of the former period.[1] Prior to the adoption of this method, Egyptian river craft had been steered by several paddlers, who stood on the overhanging counter. The next development was to have a powerful steering oar suspended on either quarter—a notable sequence, as the natural inference, did we not have this Egyptian evidence, is to deduce the modern rudder from the median steering oar of the 12th dynasty vessels.

In still another detail—the oculus—do Indian river craft show their affinity with ancient Egyptian types. The cargo carriers of the Ganges such as are to be seen at Benares unloading stone and firewood often show an ornamental brass "eye" on each bow (Pl. VI, fig. 4). In Egypt this oculus, with eyebrow shown almost exactly the same in detail as we see to-day in the Ganges boats, was placed on the funeral boat wherein the mummy of the departed was ferried across the Nile to the tomb. It symbolized the eye of Osiris guiding the dead on the voyage to that other land not to be entered without the aid of this deity and his shallop. The Romans and Greeks extended the practice; they endowed all their sea-going vessels with the oculus, a custom still lingering in the south of Italy. In Indian waters the only survivals I know are upon Ganges cargo craft, the Kallathoni of Point Calimere and the Hindu coaster of the north of Ceylon (Pl. VI, figs. 3 and 2). In ancient India the custom was widespread.

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[1] Chatterton, E. Keble, *Sailing Ships*, London, 1909, p. 34.

Babylonian affinity with Indian river craft, is seen in two instances; the first is the wicker coracles used on the Tungabhadra, the Cauveri and a few other rivers (Pl. V, fig. 6), the other is the ornamentation of the passenger barges of Benares.

The coracles of Indian rivers approximate in construction closely to those described by Herodotus as used by the merchants of Assyria to convey their goods down the Tigris. Alike in the ancient Mesopotamian and the modern Indian coracle, the craft was made water-tight by covering the outside with hides, thereby differing from the modern coracle or guffa of the Euphrates and Tigris which is coated with pitch. The Indian coracle, like its Chaldean relative, sometimes attains quite a large size, up to 12 or even 14 feet diameter across the mouth; small ones are used largely to ferry passengers across rivers, while the larger are used for bulky or heavy transport down stream. I cannot however accept the statement of Herodotus that the Tigris coracle could carry 5,000 talents weight, for taking the talent at 60 lb., this would involve a burden of over 130 tons. Indian coracles have, however, been used for the transport of a 12-pounder gun with half-a-dozen soldiers and a couple of boatmen, and are in regular use by M. and S.M. Railway engineers in flood-time bridge repairs.

A second Babylonian affinity with India seems to survive in the ornamentation of Benares ceremonial barges with a boldly executed figurehead both at the bow and at the upcurved stern.

In this connection it is notable that the Phœnicians were in the habit of ornamenting their vessels with a small image of one of their deities, which Herodotus states was placed on the prow as a figurehead; Hesychius and Suidas however say it was placed on the poop. The figures of Phœnician ships that have come down to us are all of war galleys with low ram-shaped prow, and these do not show any figurehead; if one was used it may have been upon their merchant ships only. In any case the forepart of Phœnician vessels was low and had not the upward curve seen in Chaldean and Benares barges.

PART V.—THE LIGHT SHED UPON EASTERN ETHNOLOGICAL PROBLEMS BY INDIAN BOAT DESIGNS.

I entered upon the present enquiry largely with a view to ascertain if any evidence is forthcoming from this source upon the supposed trade connection between Phœnicia and India in ancient days. I felt however that some connection would also be found with the Malay Archipelago, as the significance of the outrigger canoes of South India and Ceylon had early occurred to me. I was not however prepared to find, as I have done, that no evidence whatever exists of any Phœnician trade influence, and I was still more unprepared for the extreme weakness of the Malayan connection coupled with the strength and importance of Polynesian affinities. These latter are so strong that I cannot see how ordinary trade communications on the extremely limited scale which ancient commerce alone permitted between places so far apart could have brought about such close relationship, particularly when we note that Indian history gives no hint of any commercial relations having existed between India and the present-day users of the single outrigger in Oceanic lands, and that no Austric language appears to be represented among Indian coast people.

Some of the main conclusions I am forced to may appear startling and I do not put them forward other than as part of certain working hypotheses which have in their favour a number of important ethnological facts, some of which have been enumerated whilst others will be mentioned later. It will however be convenient if before doing so, I outline the hypotheses which I wish to put forward. Stated in as few words as possible, I believe the evidence of boat design in India, taken together with that of several peculiar methods of fishing practised in certain Indian localities and reinforced by various philological and ethnological data already known, lead us to the following conclusions, viz. :—

(*a*) The Pre-Dravidian coast population of Southern India was composed of varying blends of Negrito and proto-Polynesian stocks, the former the earlier. The former appear to have contributed a considerable portion of the round-headed element in the very dark races in hill and forest tracts.

(*b*) The Polynesian section of the pre-Dravidian coastal population of India is responsible for the introduction of the single outrigger form of canoes and boats, which in Polynesia of the present day is the characteristic and predominant type of boat-design.

(*c*) From the universality of the double outrigger design among Malaysians (Indonesians) and its absence among the outrigger-using races of Polynesia, Papuasia and Australia, save exceptionally on those shores turned towards Malaysia, I judge the double outrigger to be of Malaysian invention.

(*d*) The fact that the outrigger canoes of Madagascar and East Africa are typically of the double form, and that the design of the float attachment is of a very peculiar type, such as is elsewhere confined strictly at the present day to the northern coast of Java, make it appear probable that the colonists of Madagascar who introduced this double form of outrigger came from this particular region in Malaysia.

(*e*) A Malaysian wave of immigration *viâ* Ceylon appears to have followed the Polynesian at a much later date, and after the advent of the Dravidians, bringing coconut cultivation from the Malay Archipelago. The Shanars and Izhuvans (toddy-tappers) of South India probably date their ancestry to these immigrants.

(*f*) That the true Dravidians belong to the Mediterranean race.[1]

(*g*) That the Dravidians acquired many customs now considered typical of the Mediterranean race while in the undivided race state, e.g. certain river boat forms and particularly the quarter rudder; also probably the use of the conch shell, though this is common also to the Papuasian and Polynesian peoples.

(*h*) That before splitting off from the original stock, those of the Dravidians living in Mesopotamia borrowed or invented the circular coracle, and the reed raft.

(*i*) That some large portion of the race was subsequently forced by circumstances, possibly the pressure of some Alpine or Mongoloid race from the north-west (Akkads) or of Semitic people from the south or south-west, to pass eastwards, the Brahui language marking their presence at one time in Baluchistan.

(*j*) That on arrival in India from Baluchistan, they spread along the valleys of the Indus and the Ganges, introducing the boat forms of the Nile and the Tigris as they went, the former on the large perennial rivers, the latter on those which carry little water in the dry season.

(*k*) The Dravidians being inland or rather river people were clever irrigation agriculturists; to them it seems clear that we owe the eminence that India has had in this art throughout the historic period.

(*l*) Being river people, the early Dravidians would be glad to press the Polynesian sea-fishermen into their service, and to learn this art from them.

(*m*) The Polynesian element seems to have been entirely absorbed politically and linguistically by the Dravidians, a result explicable by the fewness of their numbers, their scattered condition, and their greater plasticity due to their hybrid origin (? Caucasian × Mongolian × Papuasian).

The Types and Distribution of the Outrigger Canoe Design.

A recent extensive tour through Malaysia and the western fringe of Papuasia, has enabled me to survey critically the extent and variation in form and detail shown by the outrigger boat design in this extensive region. Such a survey so far as I know has never before been adequately carried out; I hope shortly to describe the results attained, but for present purposes it will suffice if I state the outstanding conclusions

[1] This particular deduction is not original; Mr. F. J. Richards, I.C.S., has recently marshalled many arguments and facts in its favour. For these the reader is referred to his paper in last year's *Proceedings of the Mythic Society of Bangalore.*

based upon my own work in this region, reinforced by that of Alexander on South Sea types, of Haddon on those of Torres Straits and Australia, and by the references to this subject found in the literature of Pacific and Australasian travel.

Outrigger boats are divisible into two classes:

A.—*Double outriggers*, *i.e.* those having an outrigger float boomed out on each side, and

B.—*Single outriggers*; those with an outrigger float on one side only.

Both these main divisions are again subdivided according as they have (*a*) one or two, or (*b*) multiple (three or more) transverse poles (booms) connecting the boat or dug-out with the outrigger float. A further distinction is concerned with whether the boom be attached (I) directly thereto, or (II) indirectly by means of an intermediate joint which may consist of a variety of devices amongst which the most noteworthy are (1) straight sticks or stanchions, (2) obliquely placed rods, straight or curved, (3) U, Y, and O-shaped pieces, and (4) spliced elbow intermediaries.

Plotting the distribution of these varieties upon a chart of the world, we find that single outriggers with a small number of booms are characteristic of two distinct and widely severed regions. The first comprises India, Ceylon, the Maldives, the Nicobars and the western coast of Sumatra (Mentawei Islands); the second, the whole of Polynesia, Micronesia and Papuasia excepting the extreme west of New Guinea.

Those with multiple booms are confined to Oceania, the north coast of Australia (east coast of N. Queensland), and the Andaman Islands, localities far apart racially and geographically.

The range of double outriggers like that of the 2-boomed single outriggers is split up into two far-severed regions, the more extensive comprising the whole of the Philippines, Celebes and Moluccas, together with their dependent islands, the western extremity of New Guinea, and, further south and west, the islands of Lombok, Bali, Madura and Java. (Timor and Timorlaut I have not visited). The lesser area of distribution comprises the isolated region of Madagascar and the Comoro Islands with an extension to East Africa where it is found on the coast between Dar-es-Salaam and Lamu. The finest double outrigger canoes are those of East Java, Bali, the Philippines and the Celebes, where the coast people are more intelligent and enterprising than those to the eastward; these have usually two booms on each side in the case of smaller boats with three in the larger. These are attached to the float either directly or by a strong elbow joint. The most primitive appear to be the multiple-boomed outriggers of Western New Guinea, where as many as ten cross poles are employed, attached by upright stanchions to a soft wood float on either side. The Papuasian (Papua + Melanesia) type of single outrigger which includes also that of Tonga, Fiji, and Samoa, is almost always of the stanchion type, whereas the true Polynesian, meaning thereby the northern and eastern sections of Polynesia, has either direct or bracket connection between the booms and the float. Direct connection is also the characteristic of the single outriggers of India and Ceylon.

If we consider the Negritoes and the Oceanic Negroes (Papuasians) to have been the first inhabitants of Malaysia and Papuasia, and the proto-Polynesians as the next

comers, forming the present Polynesian race by crossing with the higher elements of the Papuasians and both races using single outriggers, we can readily understand the peripheral distribution of this type of boat by the hypothesis, accepted fairly generally, that a Mongoloid race, the proto-Malays, spread fan-like from the Indo-Chinese peninsula among the islands inhabited till then by Negritoes, Oceanic Negroes and proto-Polynesians. This Mongoloid stock eventually partly drove out and partly absorbed these races over much of the region now known as Malaysia or Indonesia and for certain reasons developed the double outrigger as their type of small sea-craft. Some of these Malaysians as we may term them, seem to have passed to Madagascar at a very early date, carrying the double outrigger with them; thence the Arabs appear to have introduced it into East Africa. At the present time the Malays of the northern and eastern coasts of Sumatra and of the Peninsula have discarded the use of outrigger canoes; this is a comparatively recent alteration in sea-custom for at the latter end of the 17th century (1688) we find Dampier describing the construction of a double outrigger canoe by Achinese sailors. The influence exerted by constant intercourse with Western races upon an enterprising people ready to learn, has wrought this change.

Negrito, Australian and Papuasian Affinities.

The fundamental similarities between the Andamanese type and a certain Australian form of single outrigger fitted with multiple booms have already been discussed, and the conclusion formulated that the Negritoes are to be credited with the invention of this particular type, subsequently borrowed by certain Australians. As we have Negrito races in the Malay Peninsula (Semangs, etc.) and in the Philippines (Aetas), and as there is distinct evidence of their blood being present in New Guinea as well as in Melanesia, while their descendants are numerous in Africa, it is reasonable to conclude that originally they extended from Africa, throughout India and the Indo-Chinese Peninsula, and to all the islands within easy reach of these coasts—from the Andamans on the West to New Caledonia in the East. Their presence in so many islands connotes some skill in sea-craft, and therefore I do not consider it unreasonable to postulate them as the originators of that form of outrigger canoe found in the Andamans, and on the east coast of Northern Queensland. So far as is known the Andamanese Negritoes held no communication with strangers prior to our occupation of the islands, and history shows that they have been consistently hostile to all persons visiting their islands. Another peculiarity which has had as much to do with the isolation of these islanders as their hostility to strangers, is the absence of the coconut palm from the archipelago with the exception of the Cocos Islands. As they are considered to be of pure Negrito blood, and so represent probably the most ancient of the distinct human races now surviving, it is difficult to conceive of their adopting a boat-form from any other race, particularly in view of their inveterate aversion to hold any dealings with other races. What they have, must be of their own invention, hence my conclusion that they are the inventors of that particular type of outrigger in use in their islands.

The route by which the ancestors of the Australian aborigines reached Australia is still unknown; their origin and relationships remain among the most difficult anthropological puzzles awaiting solution. Some connection with India has always appeared probable. India lies in the direct pathway of race movements from West to East, and various facts have been adduced in favour of proto-Australians having once inhabited India; among the chief of these has been the existence in South India of a form of curved throwing-stick akin to the Australian boomerang. Curved throwing-sticks were also used by the ancient Egyptians in the chase. A somewhat similar case is that of one form of Australian sea-raft which may be of common origin with the catamarans in use on the Coromandel coast of India. The latter craft are highly specialized and removed entirely from the category of simple rafts which are devices common to all races; similarly some of the Australian "sea-rafts" show enough specialization to make them worthy of inclusion in the same class as the Indian catamaran. In considering this problem and bearing in mind the Caucasian affinities of the Australian aborigines, the presence of sea-going sailing rafts on the Formosan coast has some significance for there is evidence of a Caucasian race having inhabited south-east Asia in pre-Mongol times; traces of these people are found in Cambodia and as there can be no question of the Ainus of Japan being of Caucasian descent, we may well credit Formosa with having been colonized by a branch of this same race. Hence it may well be that the *shaped raft* or catamaran is due to the inventiveness of an ancient and far-wandered branch of the Caucasian or so-called white race.

The traces of Papuasian influence upon India are faint and in most cases are due to cultural drift rather than to the settlement of any of the race in India. An example of the former is probably the common use of the betel leaf in chewing, this being accounted by Prain[1] as of Papuasian origin. More direct seems to be the connection evidenced by the close similarity in the form and decoration of canoes and the method of outrigger attachment between the canoes of the Nicobar islanders and those of many Papuasians. As already described, the Nicobar outrigger canoes have peculiarly high and attenuated prows, and are of the single type, with two booms, each attached to the float by means of a complex arrangement of three pairs of oblique stanchions. A strong Malay element exists in the Nicobarese but strangely enough the form of the hull, the single type of outrigger frame, and the method of float and boom attachment are all foreign to the Malaysian or Indonesian types. Their nearest relationship is with the high-prowed single outriggers of New Guinea and with Fijian outriggers. At Manokwari in Geelvink Bay (N. Guinea) I have seen many canoes with high prows that suggest similarity in origin, while in Humbolt's Bay all the local outriggers have a mode of outrigger attachment almost identical with the Nicobar pattern, differing only in there being two pairs of oblique stanchions instead of three pairs.

Of interest here are the facts recorded by Boden Kloss[2] that occasionally

[1] Prain, Sir D., *Man*, 1917, No. 77.

[2] *Loc. cit.*, pp. 227 and 215.

" besides the aquiline noses already mentioned, a distinctly Jewish or Papuan feature is met with," that the skin of these people is far darker than is usual among Malays and the hair occasionally curly—all suggestive of the presence of a strain of Papuasian blood.

The Polynesian Element in India.

Prior to the incoming of the Dravidians into Southern India it seems probable that a coastal immigration and settlement of Polynesians occurred. From the geographical distribution of outrigger canoes and of brachycephalic coast people, it is probable that these Polynesians crossed from Sumatra. It is significant that at the present day an isolated remnant of a race having strongly marked Polynesian characteristics inhabits the Mentawei Islands off the *west* coast of Sumatra. Rosénberg [1] describes them as resembling in many points the natives of the Marquesas Islands—a fine-looking gentle race who deck the head and the ears with flowers in the Polynesian fashion. Their cast of features is far less Mongol-like than their Malay and Battak neighbours, and, more striking still, their hair is often very curly. A point of the highest importance in this connection is the fact that in common with Polynesians, they employ a single outrigger on their canoes, in striking contrast to the double form so characteristic of Malaysian small craft. The Sumatran Polynesians would naturally land first in Ceylon, whence they appear to have passed to the south-eastern coast of India, and eventually up the West Coast. As they spread they doubtless planted fishing colonies at favourable points, establishing there their peculiar boat designs. Such centres may well have included Galle, Colombo, and Korkai, where the embouchure of large rivers makes fishing remunerative. Palk Bay and the Gulf of Mannar, with their wealth of food fishes and treasures of pearls and chank shells, would early attract the attention of the maritime newcomers, and, it is not surprising that there we find the Polynesian boat forms in great variety, and, in common with peculiar Polynesian fishing devices, in continued high esteem by the local fishermen and divers. These people appear also to have freely settled upon the West Coast looking to the great value still set upon the outrigger on the Bombay coast.

The Maldive islands were probably peopled by Polynesian immigrants at a very early period—much earlier, I believe, than is generally supposed, for we find the Maldivians employing fishing methods nowhere else in use except in Papuasia and the Pacific. Of these the two most important are (*a*) the luring of sword-fish and other great predaceous fish within easy spearing distance by means of a rude wooden representation of a flying fish dangled from the end of a short rod,[2] and (*b*) the methods employed in the attracting, catching and curing of bonito, which are almost identical as carried on by the Maldivians and the Japanese, in the latter of whom a strong Polynesian strain probably exists in the higher or governing classes. The Laccadive

[1] Rosenberg, H. von, *Int. Archiv. f. Ethnogr.*, I. 1888.

[2] Dampier's Account of New Holland and the adjacent Islands in Pinkerton's " Voyages " and Hornell in *Madras Fisheries Bulletin*, No. 4, p. 114.

Islanders also employ the former fishing method, but being of different racial origin, they appear to have borrowed it from the Maldivians *viâ* Minicoy.

The balance-board using fishermen in Palk Bay employ also a method of fishing small Octopus for bait which likewise is found in the Pacific—the sinking overnight of large numbers of shells tied at short intervals along a long rope. In Japan the refinement of employing small narrow-necked earthenware jars instead of shells is practised.

I am inclined to think that the migration of these Polynesians passed on at some indeterminate period from South India and the Maldives to Madagascar, for a good many of the Malagasy tribes older than the Hova (the Hova being by tradition the latest arrived of the various Malagasy-speaking waves of immigration that have successively broken upon the shores of this island), according to Sir H. H. Johnston, bear a strong facial resemblance not to the Mongoloid Malay, but to the true Polynesians of the present day.

As this paper is not intended to do more than to put forward certain hypotheses, and the limited evidence in favour of such shown by the survival of peculiar boat forms in India, I cannot take up satisfactorily the anthropological aspect of the problems involved; indeed without an extensive anthropometric survey of the fishing communities of our coasts such an attempt would now be folly. It is unfortunate that Mr. Thurston's investigations from this standpoint did not include sufficient examples from the coastal areas in India where Polynesian boat designs persist—hence no data are at present available to check my Polynesian hypothesis with the exception of the measurements which I have taken recently relating chiefly to the Parawa fisher caste of the Tinnevelly coast given below. The subject is a greatly involved one, for we have to face the fact that the Austric-speaking peoples are very heterogeneous anthropologically though fairly homogeneous linguistically.

The presumption is however that this strain, if it existed, was brachycephalic and the fact that the Tulu, Canarese, and Marathi-speaking peoples include a large proportion of round skulls, whereas the Malayalis of Malabar are typically long-headed, is decidedly in favour of my main contention, as one of the clearest facts brought out in my survey of boat designs is that the Konkan and the Kanarese coast inhabited by the comparatively broad-headed Marathas, Canarese, and Tulus are distinguished by strong adherence to the outrigger design, whereas on the Malabar coast, occupied by the long-headed Malayalis of Dravidian race, this form of boat is singularly conspicuous by its absence.

Thus Thurston[1] in a table of the head measurements of representative classes in the areas in question, gives the following:—

Three classes of Marathas as having cranial indices of 82·2, 81·8, and 79·8 respectively; of five classes of Canarese-speaking people as 81·7, 78·5, 77·8, 77·6 and 77·3; of two Tulu-speaking classes as 80·1 and 78·0 respectively (Billavas and Bants), while of three classes of Malayalis, the average indices were as low as 75·1, 74·4 and

[1] *Castes and Tribes of South India*, Vol. I, p. xxxviii.

73·0. The broadest headed of these Malayalis were of the Mukkuvan or fisher caste (75·1), a point of some importance as it indicates possible admixture with some broader-headed race.

Very striking and pertinent are the data I recently obtained upon the cranial index of the Parawa fishermen of the Tinnevelly coast. So far as I know no anthropometric measurements of this caste have hitherto been published, and it has been inferred that they agreed in long-headedness with the overwhelming majority of Tamil-speaking people to the northward whereto Mr. Thurston's investigations were chiefly directed. My investigation shows this conclusion to be entirely erroneous and proves them to be distinctly brachycephalic on the average of the first 50 measured. (For details see tabulations appended). Of these as many as 24 had a cranial index of 80 and over, whilst the average was 79·4; the maximum was, however, as high as 92 5, the minimum being 70·9. These Parawas are often tall and well-made men, of muscularity distinctly greater than the ordinary Tamil ryot engaged in rice and cotton cultivation. (Pl. I, fig. 1).

The roundheadedness of Marathas and other races in the Bombay Presidency has been referred by Risley to a strong strain of Scythic or Hun blood in these people; even assuming this to be so, a hypothesis denied by Crooke[1] and others, a similar explanation is impossible in the case of the Tinnevelly caste above cited, as there has never been any suggestion of Scythic invasion of the extreme south of the Peninsula I incline to think that these Parawas represent a part of that fierce Naga race described by ancient Tamil writers as in possession of the coast districts and with Negapatam as their chief town when the Tamils first arrived in the south.[2] If so, I would then identify the Nagas with an ancient coastal people of Polynesian affinity.

In this connection, are notable the frequent allusions in early Tamil poems[3] to voyages made by merchants and others to Nagapuram in "Chavakam" whereby Sumatra and Java are known in the Tamil classics. To-day Negapatam (Nagapattanam), "the city of the Nagas," is the nearest port on the Tamil coast to Sumatra; it conserves the tradition of long trade relation with the Straits and China; its harbour still forms the southern gate to India from the East. The legend of Asoka's naval punitive expedition against the Naga pirates who had plundered Indian ships has already been referred to (p. 213).

A point of great importance is the current traditional belief among the Parawas themselves, that they are incomers in the parts they now inhabit and not of indigenous stock. They claim high descent and boast of being allied to the lunar race; they believe that their original country was Ayodhya or Oudh and that previous to the war of the Mahabhārata they inhabited the territory bordering on the river Jumna. One of their legends[4] states that at the close of the last *kalpa*, when the whole earth was covered with a deluge, they constructed a dhoni or boat, and by it escaped the general destruction; when dry land appeared they settled on the spot where the dhoni rested.

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[1] Crooke, W., *Man*, 1917, 91.
[2] Kanakasabai Pillai, *The Tamils Eighteen Hundred Years Ago*, Madras.
[3] Kanakasabai Pillai, *loc. cit.*
[4] Thurston, E., *Castes and Tribes of South India*, vi, p. 141.

Thurston adds: "The Parawas were once a powerful people and no doubt derived much of their ascendancy over other tribes from their knowledge of navigation. They had a succession of kings among them, distinguished by the title of Adiyarāsen, some of whom seem to have resided at Uttara Kōsamangay ..... in the neighbourhood of Ramnad."

The fables concerning their northern origin appear to have no foundation in fact, but they do have value as corroboration of the theory that they are of different race to the mass of the population of South India. Further evidence in favour of this belief that the ancestors of the Parawas were immigrants from a distant land whence they must have come in boats, looking to their occupational calling, is contained in the report to the Governor of Ceylon and Dutch India, dated December 1669, by two Dutch officials, Van Reede and Laurens Pyl,[1] who wrote:—

"Under the protection of those Rajas there lived a people, *which had come to these parts from other countries*—they are called Parruas—they lived a sea-faring life, gaining their bread by fishing, and by diving for pearls; they had purchased from the petty Rajas small streaks of the shore, along which they settled and built villages, and they divided themselves as their numbers progressively increased.

"In these purchased lands they lived under the rule of their own headmen, paying to the Rajas only an annual present, free from all other taxes which bore upon the natives so heavily, *looked upon as strangers*, exempt from tribute or subjection to the Rajas, having a chief of their own election, whose descendants are still called Kings of the Parruas, and who drew a revenue from the whole people which in process of time has spread itself from Quilon to Bengal.[2] Their importance and power have not been reduced by this dispersion, for they are seen at every pearl fishery (on which occasions the Parruas assemble together), surpassing in distinction, dignity and outward honours, all other persons there, and still bearing their own appellation.

"The pearl fishery was the principal resource and expedient from which the Parruas obtained a livelihood, but as from their residence so near the sea, they had no manner of disposing of their pearls, they made an agreement with the Rajas that a market day should be proclaimed throughout their dominions, when merchants might securely come from all parts of India, and at which the divers and sutlers necessary to furnish provisions for the multitude might also meet, and as this assemblage would consist of two different races, namely the Parruas and subjects of the Rajas, as well as strangers and travellers, two kinds of guards and tribunals were to be established to prevent all disputes and quarrels arising during this open market, every man being subject to his own judge, and his case being decided by him; all payments were then also divided among the headmen of the Parruas, who were the owners of that fishery, and who hence became rich and powerful; they had weapons and soldiers of their own, with which they were able to defend themselves against the violence of the Rajas or their subjects."

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[1] Hornell, J., *Report on the Indian Pearl Fisheries in the Gulf of Mannar*, Madras, 1905.

[2] Vangale, a village, a few miles south of Mannar, in Ceylon. (J. H).

In considering the suggestion I make that a Polynesian immigration into India occurred prior to or soon after the arrival of the Dravidians, the fact should not be forgotten that the Malayo-Polynesian settlement of Madagascar antedated the spread of Hindu influence in the Malay Archipelago (in the early centuries of our era), for there are said to be no Sanskrit words in the Malagasy languages. To pass from Sumatra to Madagascar in numbers sufficient to settle a country and this not once but in several successive waves, is difficult to credit, but if we intercalate India with its dependency of the Maldive Islands, the difficulty diminishes to reasonable dimensions. Against this Sir H. H. Johnston[1] has urged that they have left no traces of their passage, but this argument is, I think, invalidated now that I have shown how extensively Polynesian boat designs have survived on sections of the Indian coast line, taken in conjunction with the round-headedness of certain of the most numerically important castes in the same localities, which I have recently discovered.

I append tabulated measurements of men belonging to four of the principal castes in Tinnevelly,—Vellalar, Parawar, Shanar and Paraiyar,—from which it will be seen that the three latter which are sub-brachycephalic, agree very closely in the average cranial index, whereas the Vellalas approach much more closely to the index accepted by Thurston and others as representing the typical Dravidian. I also give measurements of a number of men from the Tanjore coast. Comparison of the latter with the former shows these representatives of the Tanjore population to contain much less of the round-headed strain. The Vellalas of the two districts evidently have the same ethnic origin; the sub-brachycephalic Parawas of the Tinnevelly coast, a caste not found in Tanjore, are possibly represented there by Ahambadians and coast Muhammadans or Labbais (both occupied with fishing and fish-curing at the places visited) with indices respectively of 79·9 and 80·1. Conversely the Sembadavar fishermen of Adirampatam are distinctly sub-dolicocephalic with an index of 76·03. These men, however, are not usually deep-sea fishermen; they are the principal users of the casting net and fish chiefly in rivers and backwaters, a fact which, when taken in conjunction with the shape of their heads, points to a Dravidian origin with its concomitant of fishing customs derived from the Tigris, Euphrates and Nile.

The Shanars present several very curious divergences from the other castes named. In Tinnevelly district they form a very important section of the population; their occupational calling is Palmyra palm cultivation; in Travancore their kinsmen, the Izhuvans, cultivate the coconut. As will be seen from the tables appended, the cranial index of the 100 individuals measured was 80·7; the maximum was 90·3, the minimum 71; as many as 60 were 80 and over. They are decidedly broader headed than the Parawas; more stoutly built than the latter, frequently short and thick-set, with an entirely different caste of features to the typical Parawar type. Among the latter curly hair is not uncommon; among the Shanars the hair of the head is coarse, black, and straight. In features considerable variation is seen; one well-marked type can, however, be made out as predominant. In this the

[1] *Living Races of Mankind*, Vol. II, p. 420.

face is wide and short, the nose short, moderately small, and depressed very often at the root. No prominent eye-ridges; the lips moderately thick. The general impression given by the features is that of heaviness.

To anyone familiar with the heavy-featured Malaysian people of Java and the southern Celebes, the approximation of many of these Shanars to the same general type is very striking. Several indications point to a common origin. (*a*) The coconut is not a native of India; it reached that country by way of Ceylon and the Malay Archipelago; hence we may infer that the people who live by its cultivation most probably accompanied it from the same region. Local tradition supports this, for the Izhuvans are said to be descendants of Shanar colonists from Ceylon who brought the coconut palm with them.[1] (*b*) The Ceylon and the Indian outriggers differ considerably and these differences may quite likely be correlated with separate waves of immigrants from Malaysia—the first Polynesian, the second Malaysian. In Madagascar we have distinct evidence of several waves of Malayo-Polynesian immigration; if India and Ceylon were half-way stations between Sumatra and Madagascar as we have reason to believe, from the facts I have adduced in regard to the outrigger design of canoe, evidence of two Malayo-Polynesian waves having broken on the shores of South India is precisely what we should expect.

But it is vain labour to attempt to go further in the elaboration of the hypotheses stated above, pending the accumulation of much more definite and detailed information regarding the physical characteristics, customs, habits and superstitions of coastal communities on the sea-board of India and of the surviving Munda-speaking races for correlaton and comparison with corresponding data relating to the peoples of Malaysia, Polynesia and Papuasia respectively.

MEASUREMENTS OF 50 MEN OF THE PARAWAR CASTE. TINNEVELLY DISTRICT.

No.	Height.		Skull.			Nose.		
			Length.	Breadth.	Cr. Index.	Length.	Breadth.	Index.
	Ft.	Ins.	Cms.	Cms.		Cms.	Cms.	
1	5	2½	18·3	15	81·96	5·2	3·8	73·07
2	5	7¼	20·7	15·1	72·94	5·6	3·5	62·5
3	5	8¼	17·3	14·9	86·12	5·3	3·5	66·03
4	5	3½	18·8	14·6	77·65	5·1	4·4	86·27
5	5	9¼	18·6	15	80·64	4·9	4·2	85·71
6	5	4¾	19	15·2	80	6	4·1	68·33

[1] *The Cochin Tribes and Castes*, by L. K. Anantha Krishna Iyer, Vol. I, p. 277. Madras, 1909.

No.	Height.		Skull.			Nose.		
			Length.	Breadth.	Cr. Index.	Length.	Breadth.	Index.
	Ft.	Ins.	Cms.	Cms.		Cms.	Cms.	
7	5	0½	18·7	14·4	77	5·7	3·5	61·40
8	5	2	17·7	14·5	81·92	4·1	3·9	95·12
9	5	8½	16	14·8	92·5	..	..	..
10	5	8⅜	18·7	15	80·21	..	..	..
11	5	4½	18·5	16·3	88·10	5·1	4	78·43
12	5	3½	19·2	14·5	75·52	5·4	4	74·07
13	5	0	18·3	14·7	80·32	4·6	4	86·95
14	5	8½	20·7	14·8	71·49	5·6	3·7	66·07
15	5	2¼	19·8	15	75·75	5	3·8	76
16	4	8½	19·3	14·2	73·57	5·7	4·1	71·92
17	5	5¼	19	15·2	80	4·8	3·9	81·25
18	5	1	17·5	15	85·71	5·2	4	76·92
19	5	3½	20	15	75	4·6	3·8	82·60
20	6	0¾	20	14·8	74	4·5	3·6	80
21	5	5	18·5	14·6	78·91	5·2	4·6	88·46
22	5	5¾	18	15	83·33	5·5	4·6	83·63
23	5	5½	18·7	15·5	82·94	5·1	4·2	82·35
24	5	5¾	19·3	15·5	80·31	5·6	3·8	67·85
25	5	6¼	19·7	15·2	77·15	5·4	3·9	72·22
26	4	11¼	18·5	15	81·08	4·8	3·8	79·16
27	5	3½	18·1	14·7	81·21	4·9	3·5	71·42
28	5	5½	18·4	15·3	83·15	5·4	3·8	70·37
29	5	0¼	18·5	15·2	82·16	4·4	3·5	79·54
30	5	2	18·6	15·6	83·87	5·2	4·1	78·84
31	5	0¼	18·5	14·7	79·45	5·2	4	76·92
32	5	5½	18·9	14·5	76·71	4·8	4·3	89·58
33	5	1½	19	15	78·94	5·5	3·8	69·09

No.	Height.		Skull.			Nose.		
			Length.	Breadth.	Cr. Index.	Length.	Breadth.	Index
	Ft.	Ins.	Cms.	Cms.		Cms.	Cms.	
34	5	4	19·9	14·1	70·85	4·7	3·9	82·97
35	5	8½	18·8	15	79·78	4·7	4·3	91·48
36	5	3½	19·7	14·4	73·09	5·7	4·3	75·43
37	5	4	18·9	14·6	77·24	4·4	3·9	88·63
38	5	4	19·5	14·4	73·84	5·1	3·9	76·47
39	5	5¼	18·6	14·3	76·88	4·6	4·1	89·13
40	5	6	18·4	14·3	77·71	5·1	3·8	74·50
41	5	3	19·7	14·7	74·61	5·6	4·2	75
42	5	4	19·3	14·3	74·09	4·8	4·2	87·5
43	5	1	17·2	13·8	80·23	5	4·1	82
44	5	5½	18·9	16·4	86·77	5	4	80
45	5	9½	19·2	15·2	79·16	6	4·2	70
46	5	6½	18·6	15·5	83·33	5·6	3·6	64·28
47	5	4	18·2	15	82·41	4·3	4	93·02
48	5	6¼	18·6	14·5	77·95	6·1	4	65·57
49	5	1¼	18·4	14·8	80·43	4·9	3·6	73·46
50	5	7¼	17·7	14·4	81·35	4·8	3·8	79·16
Average	5′ 4·44″				79·39			77·72

Cranial index :—

Maximum	..	.. 92·5
Minimum	..	.. 70·85
Average ..	..	.. 79·39

Nasal index :—

Maximum	..	.. 95·12
Minimum	..	.. 61·40
Average ..	..	.. 77·72

The highest cranial index was correlated with a height of 5 ft. 8½ in.; the tallest man (No. 20) was 6 ft. 0¾ in., with a cranial index of 74·00 and nasal index of 80. The second lowest nasal index of 62·5 (No. 2) was associated with a distinctly dolichocephalic head. Eight men were over 5 ft. 8 in. in height.

HEAD MEASUREMENTS OF 100 SHANARS. TINNEVELLY DISTRICT.

No.	Skull.			Nose.		
	Length.	Breadth.	Cr. Index.	Length.	Breadth.	Index.
	Cms.	Cms.		Cms.	Cms.	
1	18·3	14·9	81·42	5·4	3·5	64·81
2	18·2	14·2	78·02	4·9	3·6	73·46
3	18·1	14·9	82·32	5·1	3·9	76·47
4	17·2	14·9	86·62	4·6	3·6	78·26
5	18·9	14·5	76·71	5·3	2·8	52·83
6	17·9	14·7	82·12	4·9	3·2	65·3
7	18·8	14·3	76·06	4·9	3·8	77·55
8	18·7	15·3	81·81	5·2	3·5	67·3
9	19·3	16	82·9	6·1	4·2	68·85
10	18·7	14·8	79·14	4·7	3·6	76·59
11	17·4	14·6	83·9	5·4	3·7	68·51
12	18·3	14·3	78·14	5·1	3·6	70·58
13	18·5	14·8	80	5·2	3·4	65·38
14	17·6	15·1	85·79	5·5	3·3	60
15	17·7	14·9	84·18	5	3·5	70
16	18·5	15·2	82·16	5·2	3·6	69·23
17	17·5	14·5	82·85	4·6	3·6	78·26
18	17·6	15·3	86·93	5·3	3·6	67·92
19	18·1	15·3	84·53	4·8	3·7	77·08
20	18·5	15·6	84·32	5·6	3·7	66·07
21	19·5	14·6	78·46	5·7	3·8	66·66
22	19	15·6	82·1	4·7	4·1	87·23
23	17·2	14	81·39	4·7	3·9	82·97
24	19·3	13·8	71·5	5·2	3·8	73·07
25	18·7	14·8	79·14	4·8	3·8	79·16
26	19·1	15·4	80·62	5·9	4	67·79

No.	Skull.			Nose.		
	Length.	Breadth.	Cr. Index.	Length.	Breadth.	Index.
	Cms.	Cms.		Cms.	Cms.	
27	18·8	14·9	79·26	4·9	3·8	77·55
28	17·6	14·4	81·81	5·1	3·8	74·50
29	19·3	13·7	70·98	5·8	3·9	67·24
30	17·6	14·4	81·81	5·1	3·2	62·74
31	18·5	14·6	78·91	4·7	3·3	70·21
32	19·4	14·8	76·28	5·1	3·6	70·58
33	17·9	13·9	77·65	4·6	3·6	78·26
34	19·1	14·8	77·48	5·1	4	78·43
35	16·7	14·9	89·22	4·9	3·5	71·42
36	18·8	14·2	75·53	4·8	3·2	66·66
37	17·6	15	85·22	4·7	3·4	72·34
38	17·3	14	80·92	4·7	3·3	70·21
39	18·6	13·7	73·65	4·7	3·6	76·59
40	18·2	14·3	78·57	4	3·6	90
41	18·7	14·5	75·93	4·3	3·8	88·37
42	18·2	15·3	84·06	5·4	4·1	75·92
43	17·9	14·6	81·56	4	3·1	77·5
44	17·5	14·6	83·42	3·9	3·7	94·87
45	18	14·5	80·55	4·2	3·7	88·09
46	18·3	16	87·43	5·8	4·1	70·68
47	17·6	14	79·54	4·8	3·5	72·91
48	18	16·2	90	5·1	3·5	68·62
49	17·8	14·1	79·21	3·8	3·1	81·57
50	17·5	14·6	83·42	4·8	3·5	72·91
51	18	15·5	86·11	4·3	3·4	79·06
52	17·5	15	85·71	4·2	3·3	78·57
53	18·5	13·6	73·51	4·1	3·6	87·8

No.	Skull.			Nose.		
	Length.	Breadth.	Cr. Index.	Length.	Breadth.	Index.
	Cms.	Cms.		Cms.	Cms.	
54	17·4	14·1	81·04	4·4	3·1	70·45
55	17·5	14·4	82·28	5	3·1	62
56	17·8	14·5	81·46	4·4	3·3	75
57	18·4	15	81·52	5·4	3·6	66·66
58	18·7	14·5	75·93	5	3·9	78
59	18·5	14·6	78·91	4·8	3·5	72·91
60	18	14·5	80·55	5·3	3·8	71·69
61	18·4	14·4	78·26	4·2	3·5	83·33
62	17·5	14	80	4·5	3·6	80
63	17·5	14·7	84	4·2	3·3	78·57
64	18	14·9	82·77	4·2	3·2	76·18
65	18·8	14·6	77·65	4·7	3·6	76·69
66	17·4	14	80·45	4·2	3·2	76·18
67	17·7	13·8	77·96	5·3	3·5	66·03
68	18·3	14·3	78·14	4·6	3·3	71·73
69	18·8	14·6	77·65	4·6	3·4	73·69
70	17·7	15·3	86·44	4·9	3·4	69·38
71	18·4	14·7	79·89	5·4	3·6	66·66
72	18	14·8	82·22	4·2	3·7	88·09
73	18·6	14·5	77·95	5	3·2	64
74	18·9	14·5	76·71	4·5	3·4	75·55
75	19·5	14·4	73·84	4·1	3·3	80·48
76	19·2	14·3	74·47	5·2	3·7	71·15
77	19·1	14·6	76·43	4·4	3·9	88·63
78	18·1	14·6	80·66	4·8	3·8	79·16
79	18·7	14·4	77·00	4·3	3·9	90·69
80	17·5	14·4	82·28	4·7	3·2	70·21

No.	Skull.			Nose.		
	Length.	Breadth.	Cr. Index.	Length.	Breadth.	Index.
	Cms.	Cms.		Cms.	Cms.	
81	17·2	14·4	83·72	4·7	3·2	68·08
82	17·4	14·2	81·60	4·6	3·2	69·56
83	17·5	14·5	82·85	4·8	3·5	72·91
84	18·2	15	82·41	4·7	3·4	72·34
85	18·5	15·4	83·24	4·7	4	85·10
86	19·2	15·3	79·68	4·4	3·6	81·81
87	18·8	15	79·78	4·4	4	90·90
88	17·9	14·9	83·24	4·6	4·3	93·47
89	18·7	13·7	73·26	4·1	3·3	80·48
90	16·5	14·9	90·30	4·3	3·2	74·41
91	17·6	14·7	83·52	4·8	3·6	75
92	17·8	14·7	82·58	4·1	3·1	75·60
93	17·3	14·6	84·39	4·8	3·7	77·08
94	18·1	14·5	80·11	4·8	3·8	79·16
95	18·2	15·1	82·96	5·2	3·4	65·38
96	18	14·6	81·11	4·7	3·7	78·72
97	18·3	14·3	78·14	5·1	3·4	66·66
98	17·6	14·4	81·81	5·1	3·3	64·70
99	18·2	14·2	78·02	5·4	3·3	61·11
100	18·7	15·3	81·81	4·8	3·5	72·91
Average			80·72	.. ..		74·43
Maximum			90·30	.. ..		94·87
Minimum			73·26	.. ..		52·83

MEASUREMENTS OF 31 PARAYANS. TUTICORIN.

No.	Height.		Skull.			Nose.		
			Length.	Breadth.	Cr. Index.	Length.	Breadth.	Index.
	Ft.	Ins.	Cms.	Cms.		Cms.	Cms.	
1	5	2	17·3	14·3	82·65	4·3	3·6	83·72
2	5	4	17·4	14·4	82·75	5·3	3·8	71·69
3	5	5½	20·1	15·1	75·12	5·1	3·8	74·5
4	4	8	18·3	14·6	79·78	5	3·7	74
5	5	0	18	14·8	82·22	4·7	3·5	74·46
6	5	3½	18·4	15·1	82·06	4·9	3·9	79·59
7	5	5½	19·5	16·1	82·56	5	4	80
8	5	2	18·1	15	82·87	4·2	3·7	88·09
9	5	7	18·9	14·6	77·24	5·2	4·1	78·84
10	5	5½	18·6	15·4	82·79	4·4	3·8	86·36
11	5	5½	18·1	14·4	79·55	4·8	3·8	79·16
12	5	0¾	18·1	14·7	81·21	4·7	3·7	78·72
13	5	5½	18·5	14·6	78·91	5	4	80
14	5	4½	18·4	14·7	79·89	5	3·8	76
15	5	2¼	18·1	14·4	79·55	4·7	3·9	82·97
16	5	4¾	19	15·6	82·1	5	4·3	86
17	5	6½	18·6	15	80·64	5·2	4·2	80·76
18	5	8	17·9	14·4	80·44	5·6	3·3	58·92
19	4	11½	18·2	14·7	80·76	5·3	3·6	67·92
20	5	7¼	18·5	14·4	77·83	5·1	3·7	72·54
21	5	3	18·1	14·9	82·32	4·7	3·8	80·85
22	5	3	18·4	13·9	75·54	5·1	4	78·43
23	5	3	18·2	14·4	79·12	4·7	3·6	76·59
24	5	5½	18·9	15·2	80·42	4·3	3·8	88·37
25	5	4	17·7	14·5	81·92	5	3·2	64·00
26	5	1¾	18·2	14·1	77·47	5	4·0	80·00

No.	Height.		Skull.			Nose.		
			Length.	Breadth.	Cr. Index.	Length.	Beadth.	Index.
	Ft.	Ins.	Cms.	Cms.		Cms.	Cms.	
27	5	2	18·8	15	79 78	4·7	3·9	82·97
28	5	2	18	14·1	78·33	4·4	3·5	79·54
29	5	1½	17·7	14·6	82·48	5	3·5	70
30	5	4	17·9	14·8	82·68	4·5	4·1	91·13
31	5	9½	18·2	14·5	79·67	5·1	3·5	68·62
Average	5′	3″·7			80·34			77·89
Maximum	..	..	..	..	82·87	..	..	91·13
Minimum	..	..	..	..	75·12	..	..	58·92

MEASUREMENTS OF 6 PILLAIS (VELLALA CASTE). TUTICORIN.

No.	Height.		Skull.			Nose.		
			Length.	Breadth.	Cr. Index.	Length.	Breadth.	Index.
	Ft.	Ins.	Cms.	Cms.		Cms.	Cms.	
1	5	3	19·1	14·6	76·43	5·5	3·4	61·81
2	5	3¾	18	14·1	78·33	5·1	3·9	76·47
3	..	..	18·2	14·7	80·78	5·1	3·7	72·54
4	5	6½	19·6	15·2	77·55	5·4	3·5	64·81
5	5	4¾	18	14·3	79·44	5·3	3·4	64·15
6	5	5½	20·1	15·1	75·12	5·9	4	67·79
Average	5	4·7			77·94			67·92

HEAD MEASUREMENTS OF 20 VELLALAS FROM THE COAST REGION OF TANJORE DISTRICT.

No.	Skull.			Remarks.
	Length.	Breadth.	Cranial Index.	
			7 Saiva Vellalas.	
	Cms.	Cms.		
1	18·8	14·6	77·6	Cranial Index :—
2	18·7	13·9	74·3	
3	18	13·8	76·6	Average 77
4	19·5	15·8	81·0	Maximum 81
5	17·4	13·9	79·8	Minimum .. .. 70·5
6	19·2	13·5	70·5	
7	18·1	14·4	79·5	
			4 Pillais (Canal-boat crew).	
1	18·7	14·5	77·4	
2	18·4	14·1	76·6	Average .. .. 74·9
3	19·7	14·0	71	Maximum .. .. 77·4
4	19·4	14·5	74·7	Minimum .. .. 71·0
			9 Karaithurai Vellalas (Fishermen by occupation).	
1	18·4	14 4	78·2	
2	19·9	14·8	74·3	
3	18·8	14·3	76·0	These men are in reality Pattanavans—the true Tamil sea-fisher caste, but their appearance and cranial measurements bespeak a close racial connection with the higher caste Vellalas.
4	19·5	13·5	69·2	
5	19·2	14·3	74·5	
6	19·7	14·8	75·1	Average .. .. 74·6
7	18·8	14·1	75	Maximum .. .. 78·2
8	18·5	13·6	73·5	Minimum .. .. 69·2
9	19·1	14·4	75·3	
Average for the whole			75·5	

Note.—It is significant that Tinnevelly Vellalas living in the midst of castes which are distinctly brachycephalic, are considerably higher in cranial index than those of Tanjore where the long-headed Dravidian type appears to be dominant.

HEAD MEASUREMENTS OF 23 MEN OF THE SEMBADAVAR CASTE, AT ADIRAMPATAM (TANJORE DISTRICT).

No.	Length.	Breadth.	Cranial Index.	Remarks.
	Cms.	Cms.		
1	19·9	14·4	72·3	
2	20	14·1	70·5	
3	18·8	14·6	77·6	
4	19·1	14·2	74·3	
5	19·0	14·9	78·4	
6	19·5	14·9	76·4	
7	19·5	14·5	74·3	
8	19·1	14·4	75·3	
9	20	15·5	77·5	
10	18	15	83·3	
11	19·1	15·1	79	
12	18·5	14·2	76·7	Average .. 76·03
13	19·1	14·1	73·8	Maximum .. 83·3
14	18·8	14·1	75	Minimum .. 70·5
15	19·0	14·5	76·3	
16	17·9	14·6	81·5	
17	19·3	13·9	72	
18	18·1	14·1	77·9	
19	20·4	15·6	76·4	
20	19·4	14·5	74·7	
21	18·6	14·4	77·4	
22	19·7	14·3	72·5	
23	19·6	14 8		

HEAD MEASUREMENTS OF 5 FISHERMEN OF THE AHAMBADIAR CASTE, ADIRAMPATAM (TANJORE DISTRICT).

No.	Length.	Breadth.	Cranial Index.	Remarks.
	Cms.	Cms.		
1	17·0	14·2	83·5	
2	18·4	14·6	79·3	Cranial Index :—
3	18·0	14·1	78·3	Average .. .. 79·9
4	19·6	15·7	80·1	Maximum .. .. 83·5
5	19.4	15·2	78.3	Minimum .. .. 78·3

HEAD MEASUREMENTS OF 4 FISHERMEN OF THE PATTANAVAR CASTE (NEGAPATAM).

1	18·5	14·3	77·3	
2	18·2	14·0	76·9	Average .. .. 75·8
3	19·1	14·5	75·9	Maximum .. .. 77·3
4	19·7	14·4	73·1	Minimum .. .. 73·1

HEAD MEASUREMENTS OF 11 MUHAMMADANS, LABBAI CASTE, TANJORE DISTRICT.

No.	Length.	Breadth.	Cranial Index.	Remarks.
	Cms.	Cms.		
1	18·4	15·2	82·6	
2	18·5	15·0	81·0	
3	17·4	13·5	77·6	
4	18·3	14·9	81·4	
5	17·0	13·9	81·7	Average .. 80·1
6	18·5	14·5	78·9	Maximum .. 82·6
7	18·5	14·8	80·0	Minimum .. 73·8
8	19·5	14·4	73·8	
9	17·6	14·5	82·3	
10	18·1	14·6	80·6	
11	19	15·6	82·1	

APPENDIX.

The Significance of the Oculus in Boat Decoration.[1]

By JAMES HORNELL.

Amongst some of the coast people of India to-day, ships and boats are endowed with more than inanimate attributes—in a vague way their crews look upon them as sentient; the remnants of ancient animistic beliefs make their craft or some portion of it the habitation of a protecting spirit requiring periodical propitiation; among communities containing men capable of higher thought, this vague feeling is sometimes refined and crystallized, a definite shrine is set up and a definite God there wor-

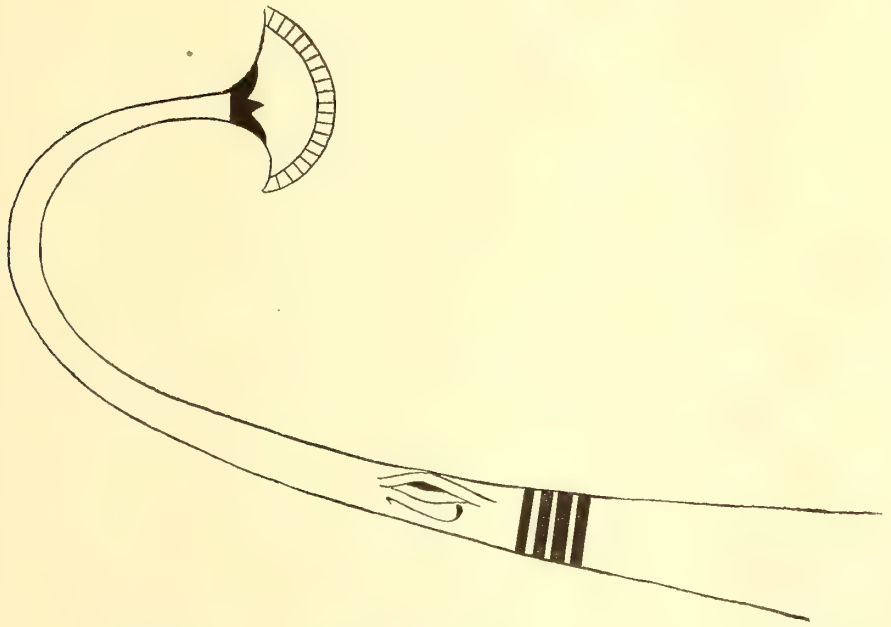

FIG. 30.—Prow of an Egyptian funeral barge, circa 1400 B.C. (after Maspéro).

shipped with ritual approaching in its main features that practised in orthodox Hindu temples.

To this belief, in my opinion, is to be traced the origin of the custom, still erratically and discontinuously distributed throughout Europe and Asia, of providing sailing craft with eyes. The custom was universally followed by the Greeks and Romans; no feature of these old vessels is more striking when one examines represer ·

[1] A paper read before the Zoological and Ethnological Section of the Indian Science Congress, held at Bombay, January, 1919.

tation of boats upon Greek and Roman vases, coins, and triumphal friezes, than the continual recurrence of a well-defined *oculus* on each bow. The mariners of ancient Italy and Greece are credited with the belief that ships required eyes to see their way from haven to haven; it may well be that the common multitude held this crude belief in later days when confidence in the Old Gods began to weaken, when once-definite beliefs began to grow vague and formless, but in the beginning it is probable that religious import attached to its employment. This view is strengthened when we find that the ancient Egyptians, in days before Greece and Rome took shape, endowed with eyes the funeral boat wherein the mummy of the departed was ferried across the Nile to the tomb. These eyes, carefully depicted with well-defined conventionalized lids and eyebrows (fig. 30), symbolized the eyes of unseen Osiris who

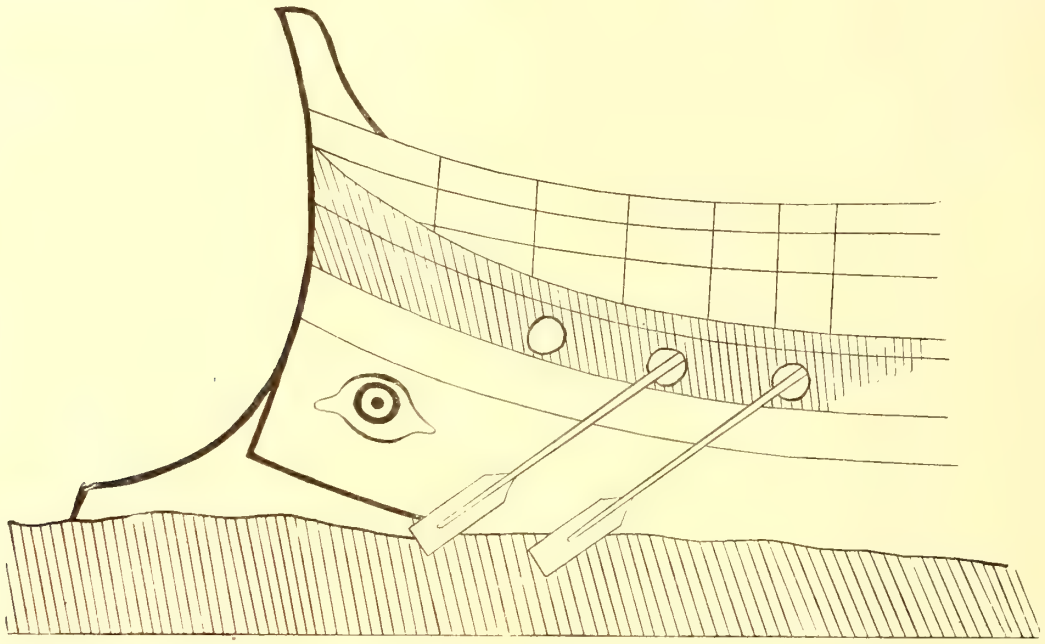

Fig. 31.—Fore part of a Greek galley from a vase in the British Museum; *c.* 500 B.C. (after Chatterton).

would eventually guide the bark of the dead to that other land not to be entered save by the aid of this deity and his shallop.

Except on these funeral boats the Egyptians do not appear to have used this eye symbol. The carefully drawn paintings of their sea-going vessels, such as the great sailing galleys employed by Queen Hatshepsut on her famous trading venture to the land of Punt, show no trace of it.

Neither to the river vessels depicted in Assyrian sculptures, unless it be merged in the eyes of the figurehead, but with the appearance of Greek and Roman ships in the Mediterranean the custom became common.

On galleys depicted upon Greek vases and coins, the oculus appears as early as 500 B.C. (fig. 31). From this time onwards the succession of eyed boats has been unbroken in Europe. During the days of Imperial Rome the symbol was equally commonly used as in earlier Greek times. For some reason, the custom died out in the

Middle Ages in the case of the large ships of commerce and war, except so far as the ship's eyes may have become incorporated with those of the figure-head of some patron saint; thenceforward its use was limited to the fishing boats and small coasting craft of communities that clung with more than usual tenacity to the customs of their forefathers. Such survivals at the present day are found among the boats of Portuguese fishermen,[1] the Xebecs of Calabria, the harbour craft of the Maltese,[2] and occasionally among the fishing boats of the Sicilian and Greek coasts.

Going eastward we find few survivals among any people under Muhammadan influence.[3] Neither Arabs, Turks, nor Indian Muslims employ it; with them its use has ceased, doubtless from their appreciation of its association with religious beliefs other than their own.

In India and Ceylon it is wedded entirely with Hinduism; usually these survivals are in boats manned by Hindus of higher religious profession than is found on the average among boat people of this religion. The four instances known to me comprise a certain class of cargo-carriers found on the Ganges, the small Hindu-owned coasters of the north of Ceylon, the clumsy-looking *kalla dhonis* of Point Calimere over against Ceylon and the masula-boats of the Coromandel coast. The first named are clinkerbuilt boats used for heavy river traffic; they may be seen any day discharging stone and firewood alongside the ghauts at Benares.

The eye in these, is fashioned in brass; the opening of the lids elliptical, with angular ends; an eyebrow in brass surmounts the eye, the ends turned up abruptly and coiled (fig. 32). The design shows a marked approximation to that of the eye of Osiris painted on the Egyptian death barge (fig. 30) particularly in the presence and shape of the eyebrow. The hull of these Ganges boats is naked of paint save at the prow where a black area is painted; the eye is within this region. At the time of new moon (*amavasi*) a garland is hung from the stem-head, and worship (*puja*) performed at the bow—a ghee lamp is lighted, camphor is burnt, the sacred conch blown, coloured paste smeared on the prow, while libations and offerings of flowers, rice, and *pan supari* are made to the God whose protection of the boat and her crew is implored.

The second instance of the survival of the oculus, is in connection with the completion and launching of the curious surf-boats in use on the Coromandel coast for seine fishing and for loading and discharging cargo from vessels in the offing.[4] These boats are constructed of planks sewn together with coir twine in order to give that elasticity without which they would break in pieces when grounding in their passage through the surf. When newly-built boats are first launched, elaborate puja ceremonies are performed connected with the worship of the sea-goddess Kanniamma, and one of the

[1] Chatterton, E. K., *Sailing Ships*, London (? 1909), p. 65.

[2] Pitt-Rivers, *The Evolution of Culture and other Essays*, Oxford, 1906, p. 225.

[3] An apparent exception is seen at Chittagong and Rangoon, where the local Muhammadan boat-people employ a modification of the Chinese sampan in great numbers. The details vary somewhat from the original and the "eyes" are often put in very roughly as part of the general scheme of ornamentation adopted from the Chinese model. Among the Malays, "eyes" are also occasionally seen on boats, *e.g.*, in a model from Selangor in the Indian Museum, No. 2764.

[4] These are known to Europeans as "masulah boats" but as *padagu* among Tamils. The Malay term *prahu* is probably derived from the latter word.

rites is the incising, scratching, or daubing of the crude outline of an eye 👁 on each bow (fig. 18, p. 174). This ceremony is termed "opening the eye" (கண்திறக்கிறது). Some of the older men state that their idea in doing this is to endow the boat with life.[1] This custom is obviously related to that followed in the fashioning of metal and stone images of Hindu deities, where ritual prescribes that the putting in of the pupils of the eyes shall be the final touch put by the artist, indeed this is not done until just before the instalment or consecration of the image in its shrine. New brass and bronze images of gods sold from shops in Hindu towns are always blind; among strictly orthodox families the eyes should be "opened"—the pupil to be marked—before they are suitable for worship. Till then they are mere lifeless images without sanctity. When we find a similar custom of "opening the eyes" of a newly-built boat just before

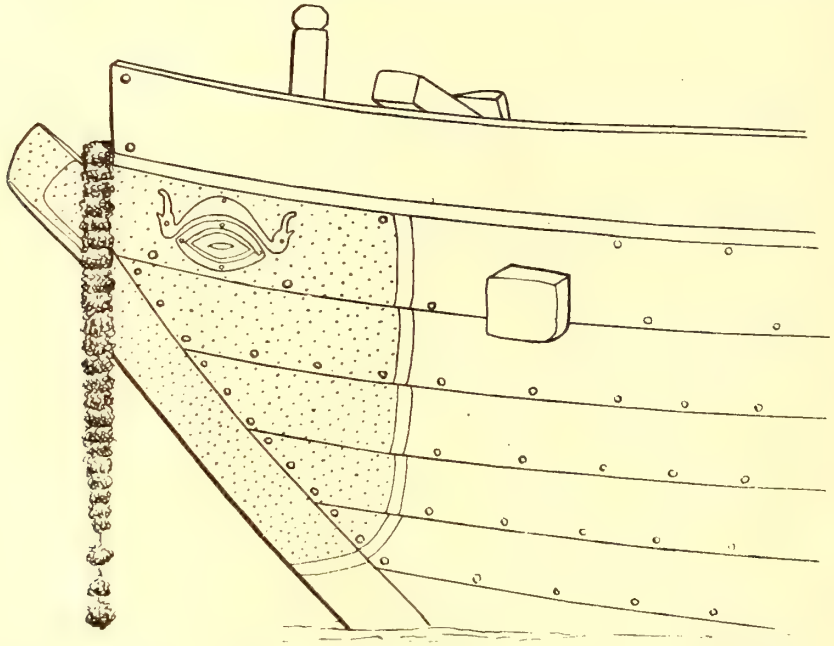

FIG. 32.—Bow of a Ganges cargo boat showing oculus in brass on a black ground and a garland hung from the stem. (Original).

launching, the fact clearly confirms my contention that the puja ceremonies are intended to instal a deity in the boat itself and to merge the boat's individuality in that of the goddess whose protection is sought. This idea is supported also by the lack of any subsequent attention to these eyes. Once they are opened, no further attention is bestowed upon them; in the course of a short time all trace of them disappears, the slight scratch made, becoming obliterated either by weathering or by the coat of paint or of tar sometimes applied to the top strake of these boats.

A most interesting survival of what I infer to have been originally a human blood sacrifice takes place after the puja ceremonies are completed; as the boat is launched down the shelving beach to take her first plunge through the surf, a pumpkin is placed in the way and the boat dragged over it, smashing it to pulp. The

[1] Others say it is done simply as an ornament, but this is said either from ignorance—old customs are dying fast—or from that peculiar reticence common the world over, regarding customs based upon superstitious beliefs.

pumpkin used is of a particular grey-coloured variety, well known in Tamil as *Kalyāna pūshinī kai* as it is intimately associated with certain marriage ceremonies. Its preparation is significant; a piece is gouged out and through the opening thus made a quantity of powdered saffron and of vermilion powder (குங்குமம்) is dropped inside, the opening being reclosed with the plug of rind first cut out. The exterior is also sometimes daubed with the same two pigments. Now it is well known that a common practice in many countries in a primitive stage of civilization has been to offer up a human victim at the launching of vessels; the Vikings and the South Sea Islanders amongst others followed this custom. It may either mean the propitiation of a protecting spirit resident either in the boat herself or in the sea or it may be designed, as Grant Allen contends, to liberate a guardian spirit from the human victim, so intimately incorporated with the very planks and timbers of the boat as to become part and parcel of its fabric.

With milder manners and the influence of higher religious conceptions, domesticated animals were substituted for the human sacrifice; the gradation in India appears to have been first the ox or the buffalo, then the sheep, next the fowl and eventually, as we see in the instance now treated of, the refinement is reached of the employment of a vegetable. But even here, old custom exerts its influence, and the pumpkin has to be so treated that when smashed, some appearance of blood spilling may be shown. The fact that the bow of the boat during the puja ceremonies is also daubed with red spots as well as the pumpkin itself, corroborates this idea that the present-day ceremony is an emasculated simulacrum of the immolation of a human victim; they appear to represent the blood splashes spurted from the sacrifice as the boat lumbered over the body.

Still further and very conclusive evidence is furnished in the fact that the word used for this pumpkin-smashing ceremony is that for sacrifice in Tamil, *bäli* (பலி). A similar use of a pumpkin filled with red and yellow powder is also employed in certain other sacrificial Tamil ceremonies unconnected with boats, but invariably associated with some deity *who dislikes animal sacrifices.* I should mention that Kanniamma, the sea-goddess, is one of these benevolent deities; the fishermen at Madras say that she would be displeased if sheep or fowls were offered as sacrifices to her. The pumpkin possibly represents the head of the victim. In the Moluccas a common type of boat of gondola-like lines has great upstanding ends, terminating in a ribbed sub-globular ornament which so reminded me of a pumpkin when I first saw it, that for want of a better name I termed these craft "pumpkin boats"; the idea occurred to me at the time that these ornaments were originally the heads of enemies—all the people of these parts were head-hunters till comparatively recent times. A well-known parallel to this boat-launching sacrifice is the belief current and persistent among Indian villagers that the Department of Public Works provides a human victim for the protection of any great undertaking it has in hand, particularly in the case of important river viaducts.

Of equal interest is the persistence of an eye upon either bow in the case of the archaic-looking *kalla dhoni* of the Tanjore coast (S. India). Until the comparatively

recent railway diversion of direct passenger traffic with Ceylon, these boats were very numerous and carried on a popular service between the little ports near Point Calimere and Kayts, the port of Jaffna, the northern capital of Ceylon.

The position of the eyes is the same as in the Ganges boats already described; they are less elaborate, being incised upon the planking of the bows; no eyebrows are indicated, merely a conventional eye bounded by elliptical lids. The pupil is shown elongated. On the starboard bow, the eye is followed by a small square containing the name of the patron goddess of the village—in the cases noted *Ammai*—surmounted by the Hindus' propitiatory sign of ஓ, *paravi* (பரவி) or "horse" being added, evidence of the dedication of the vessels to the goddess honoured, as her horse or vehicle (fig. 13, p. 168).

In Kodakarai, the village goddess, Mari Amman, is the one held in special esteem by sailors and fishermen. Her temple was accounted very rich in the days of constant trade communication between this village and Ceylon, the tindal or master of each boat giving a rupee to the temple for each voyage safely accomplished. In danger or storm the local seamen are still accustomed to call upon her for help, shouting their appeal, Amma! Amma! and vowing offerings of money if they reach shore safely through her intervention. Usually the money vowed is tied in a cloth and nailed to the mast there and then.[1] A Brahman officiates as pujari in her temple. With the imposition of quarantine rules and the concentration of coolie emigration to Ceylon, first through Tuticorin and then through Mandapam, the lucrative passenger trade of these kalla dhonis collapsed and little money now flows to the temple coffers as the pujari sorrowfully complained to me.

In passing it is worthy of remark that, very generally in India, the protecting deity of sailors and fishermen is feminine. The instance just given is one; I have seen another on the Gujarat coast where the local female deity of the harbour they happen to be fishing from, is worshipped in set form at stated times and her assistance and protection implored, while at Madras the protection of Kanniamma, a sea-goddess, is invariably sought both at launchings and during tempestuous weather—the latter is believed to be a token of her anger. By this common association with a female deity, the identity and sex of the protectress would merge eventually with that of the boat itself; as we may infer that other races have reasoned and acted similarly, this becomes a sufficient explanation for the fact that ships are considered feminine in Europe and especially in England.

The fourth instance of the use of eyes in the Indian region is from the adjacent coast of Ceylon, in certain boats belonging to Hindu owners. These craft, hailing from Valvettithurai and the neighbouring small ports, generally called Jaffna dhonis by Europeans, are known as *padagu* in Tamil. They are antiquated craft quite distinct in build and rig from the Kalla dhoni. They are rigged as two-masted schooners, distinguished from other local types by the enormous development

[1] *Cf.* the custom of placing a silver coin under the mast in fishing boats on the east coast of England at the present day!

of jibs and foresails, whereof they carry five. The eyes in these boats are boss-like, carved separately out of wood, and nailed in their place one on each bow. The iris is painted black, the eyeball white, an outer black margining outline representing the eyelid (Pl. VI, fig. 2). Even among the Hindu-owned, the use of the eye is not now universal; the custom is gradually dying out and in a generation or two will have disappeared.

Besides those owned by Hindus, a number belong to Muhammadans. None of the latter are furnished with eyes and they are further distinguished by the form of the stem-head. In the Hindu boats this takes the shape of an inwardly coiled rounded ornament, the *surul* (Pl. VI, fig. 2); the jibboom is placed eccentric upon the starboard side. In the Muhammadan variety, the jibboom is fixed in the median line and the stem piece is prolonged forwards as a bowsprit to support the jibboom.

In most of the Hindu *padagus*, particularly those adorned with eyes, the fore-part of the bows is sacred; it forms the ship's particular shrine and place of worship. The crew are usually orthodox Saivites, so the aft edge of the *surul* is painted with the three horizontal bars associated with the deity who receives their primary devotion (Pl. VI, fig. 1). In the recess below is a little shelf a few inches above the deck; on this, when I visited one of these vessels, was a blowing conch and the lamp used in the ceremonies. When worship is to be performed, usually before leaving port, one of the crew who acts as *pujari*, puts ash on his forehead, lights the little ghee lamp lying on the shelf, burns camphor and incense, breaks a coconut, and rings a bell, while an assistant blows intermittently upon the conch. Offerings of plantains, betel leaves and arecanuts are made to the god and then distributed among the crew.

When questioned the tindal would not admit that the eyes on the bows had anything to do with the god under whose protection they sailed. He explained their presence and use as the Greeks and Romans did and as the Chinese do now—that the eyes were there to enable the ship to see her way, to avoid rocks and sandbanks—in his words "without the eyes she would be like a blind man alone in the street." But that this was the original reason for placing the eyes, I feel sure is not the case; it is the general custom among the uneducated or partially educated classes to disclaim the connection of any custom they practise, with anything that savours of unorthodox superstition. For instance, a man will place the impress of a hand upon the door of his house or will tie some object around the neck of his milch cow and in spite of the transparently obvious motive, he will often stoutly deny that it meant for anything but fancy or ornament. Apart from this reason, we have to remember that the general employment of such a custom dates back so far into the past, that the original significance may well be lost, obscured, or transformed. We have also to allow for the hazy and vague ideas that the uneducated have of the fundamental reason or meaning of many of the customs they practise; with almost all, the sole valid inducement is the immemorial usage of their caste or calling or country. From a survey of the little we know of the subject, and by inference from the association of all the four Indian instances with special and specific religious observances, and above

all the linking of the oculus with the name of the goddess in the case of the kalla dhoni, we must draw our conclusions. Just as there is in India a presiding or protecting deity in each Hindu house, so in these four boats we have what cannot well be other than a survival from the days when the ceremonies attendent upon the launch of every boat in India endowed it with a presiding god or rather goddess, in whose care the vessel and her crew should thereafter be; as the house deity is associated in special measure with the entrance or threshold, so the guardian of the boat appears to be associated more particularly with the bow. Many Indian sea-customs tend to confirm this view of the sacredness of the bow and its association with the protecting deity—among others that may be mentioned is that of splashing water upon the prow when a fishing boat pushes off from shore; this is practised by the Roman Catholic fishermen of the Tinnevelly coast and it most certainly conserves for us an extremely old custom of offering libation to the boat's presiding deity.[1]

Any indignity to the bow of their boat is resented by the Hindu boat-people of the north of Ceylon as shown by the following incident. One of my assistants, when on a journey in a Jaffna dhoni, happened to sit upon the stem-head, carved as usual into a inwardly coiled ornament. The tindal was greatly annoyed at this, although my assistant was a Brahman; he ordered him to get off, telling him he should not sit there as the bow was Lakshmi, and such action was offensive to the goddess. In explanation he subsequently stated that the bow is held sacred among Jaffnese Hindu sailors, consequent upon the special religious cremonies performed at the launch of the boat. The tindal described these as follows:—

Before the boat is put into the water, it is decorated with flags and plantain trees and a garland of flowers is hung round the prow, which is also smeared with sandalwood paste and vermilion powder. A small coloured "cloth" such as is worn by young girls is also wrapped round it; finally a *tāli* or marriage token in the form of a small brass cup or bowl is tied round the same part exactly as a token of similar form but fashioned in gold, is tied around a bride's neck during orthodox Hindu marriage rites. The ceremonies appear intended to wed Lakshmi to the boat and instal her there permanently. The brass tali used at the launching is a cherished possession of the boat-owner and is handed down from father to son. Hindu boatmen in the north of Ceylon are now few in number, and the above custom is rapidly dying out.

Regarding the antiquity of the above practices and beliefs, it is of importance to note that the Jaffnese Tamils, long resident in the north of Ceylon as descendants of emigrants and invaders from the Chola and Pandyan kingdoms of South India, have retained many archaic Tamil customs long since lost by their continental kindred; they are noted also for employing in ordinary speech a form of Tamil which they claim closely approaches the classical Tamil of 1,000 to 1,500 years ago. If true,

[1] An interesting account of the belief held among the Malay fishermen of Patani that all boats have a 'oul,' is given by Dr. N. Annandale in *Fasciculi Malayenses* (Anthropology, Pt. I, 1903, p. 80). After a spell of bad luck in fishing, an offering is laid on the head of each rib of the boat. Some fishermen also make a practice of placing 'turmeric rice' on the prow of their boat every Friday, with the same object

as is probably the case, the inference follows that their local vessels may be expected to retain more marked archaic characteristics than those of ports more open to outside influence. The same deduction may be drawn regarding the Point Calimere *kalla dhonis* which are employed solely in traffic with the north of Ceylon and whose crews are closely related in origin, caste and customs with the men who man the Jaffna dhonis. Both are above the average in religious zeal, and aspire to be considered much higher in caste than the ordinary run of coast fishermen and sailors.

Other evidence of the ancient character of the custom is obtained from the frescoes in the Ajanta caves (Hyderabad), dating about 600 A.D. Among these are depicted a three-masted ship and a royal barge, both provided with eyes on the bows.[1] Similarly the Buddhist sculptures of Boro Budur in Java, belonging to the 8th and 9th centuries of our era, include one of a two-masted ship furnished with eyes; in this however the eyes have the unique peculiarity of being situated both on the bows

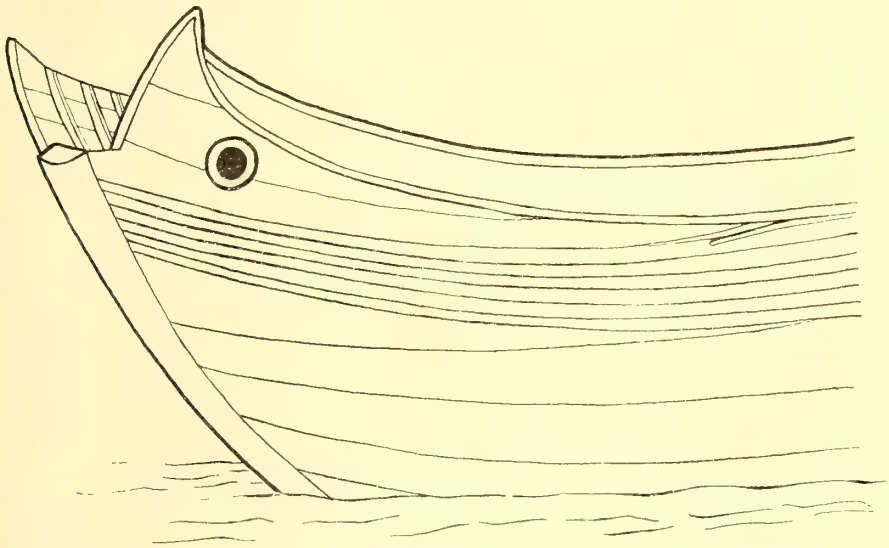

FIG. 33.—Oculus of boss-shape, on the head-boards of a Chinese junk, Shanghai. (Original).

and on the quarters—two pairs (fig. 29). This boat, like nearly all those depicted in these sculptures, is provided with outriggers, and it is possible that eyes at both ends is a reminiscence of the early days when boats provided with outriggers had no definite prow and stern, and sailed indifferently either end forward, according to the direction of the wind. If "eyes" were in use at this stage of eastern boat evolution, we may be sure there was one pair at each end. But it must be noted that only one of the several instances of boats and ships represented in the Boro Budur sculptures, show evidence of the use of "eyes." Even so early the custom had ceased to be habitual.

Eastwards from India, the principal peoples who employ the oculus are the Chinese and the Annamites; among them the custom flourishes, indeed only with them throughout the whole world is the custom habitual and universal. The exceptions where no

[1] Mukerji, R., *Indian Shipping*, p. 41.

eyes adorn Chinese craft, large as well as small, the ocean junk equally with the sampan, must be extremely few ; I do not remember seeing one without. And the Chinese boatmen and fishermen when they emigrate to the Straits Settlements and the Dutch Indies adhere to the custom ; even so far west as Rangoon, Penang and Singapore, the ubiquitous sampan greets the traveller with fixed stare from protuberant eyeballs.

The Chinese and the Annamite oculus show peculiar differences. In the former, each eye is circular, the dark or black centre, representing probably the pupil and iris combined, large and protuberant, encircled by a band of white (fig. 33). No attempt is made to impart an air of realism ; the object is wholly conventionalized, and a most

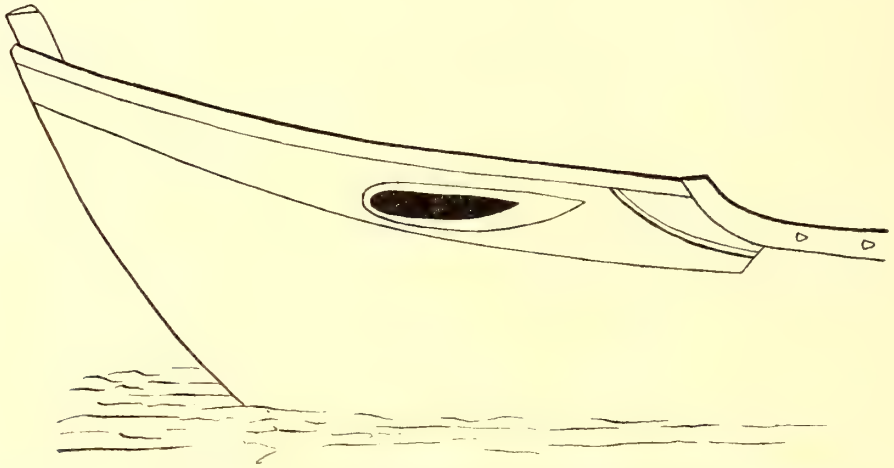

Fig. 34.—Elongated oculus characteristic of Annamite boats. (Original).

curious feature is the roundness. Whether this is due to the original design having been circular in the foreign source from which the Chinese adopted this custom or whether it is the result of convention is impossible to decide.

In Annam, on the contrary, where boats are equally commonly endowed with eyes, they are neither round nor of boss form ; they are painted on the flat of the bows and reproduce in some degree the almond outline of the Mongolian eye. The degree of elongation varies greatly ; it begins as a slight lengthening of the aft side of the circle and through all degrees passes to an extreme where it becomes an exaggerated oval with its length fully five times the vertical height (fig. 34). As in Chinese boat-eyes, the pupil and iris are represented in black upon a white ground.

EXPLANATION OF PLATES.

Plate I (Frontispiece).

Fig. 1.—Parawa fisherman of Tuticorin. Cephalic index 82·16. Type of features distinctly Polynesian.

,, 2.—Stern view of two large river boats on the Ganges at Benares. Hulls clinker built; rudder of balanced type with long shaft and tiller.

Plate II.

Fig. 1.—Arab dhangi showing sharp stern and colour scheme.

,, 2.—Arab baggala showing square stern and quarter projections.

Plate III.

Fig. 1.—A kotia outward bound.

,, 2.—Stern of a Kutch kotia.

Plate IV.

Fig. 1.—A battela with boat rigged out as counterpoise.

,, 2.—A large pattimar from Malwan.

Plate V.

Fig. 1.—A cargo lighter, Tuticorin.

,, 2.—A Tuticorin fishing canoe.

,, 3.—Tuticorin spread-canoes, hauled up on the beach. Note their great beam and graceful lines.

,, 4.—Mangalore backwater lighters. Penthouse cadjan roof to cabin and primitive square sail.

,, 5.—A two-masted fishing boat, Chilka Lake.

,, 6.—Small coracles on the River Bhawani, S. India.

Plate VI.

Fig. 1.—Fore end of deck of a Jaffna dhoni; puja to Siva being performed. Note Saivite symbol on coiled stem-head surul. The pujari holds a brass tray of offerings in one hand and a bell in the other; his assistant is blowing a conch.

,, 2.—Bow of the same vessel, showing a boss-shaped oculus nailed to the planking.

,, 3.—Fore end of a kalla dhoni, Pt. Calimere; an eye and the words *Ammai paravi* incised on the bow. Note the rude conventionalized representation of yellow garlands painted on the sides of the stem.

,, 4.—Bow of a Ganges cargo boat, decorated with an elaborate oculus fashioned in brass and with a garland hung round the stem head.

All figures except those of Plates II, III and IV are from photographs by J. Hornell.

Those of Plates II, III and IV are by kind permission of the Chairman of the Bombay Port Trust.

FIG. 1. ARAB DHANGI SHOWING SHARP STERN AND COLOUR SCHEME

FIG. 2. ARAB BAGGALA SHOWING SQUARE STERN AND QUARTER PROJECTIONS.

FIG. 1. KOTIA OUTWARD BOUND.

FIG. 2. STERN OF A KUTCH KOTIA.

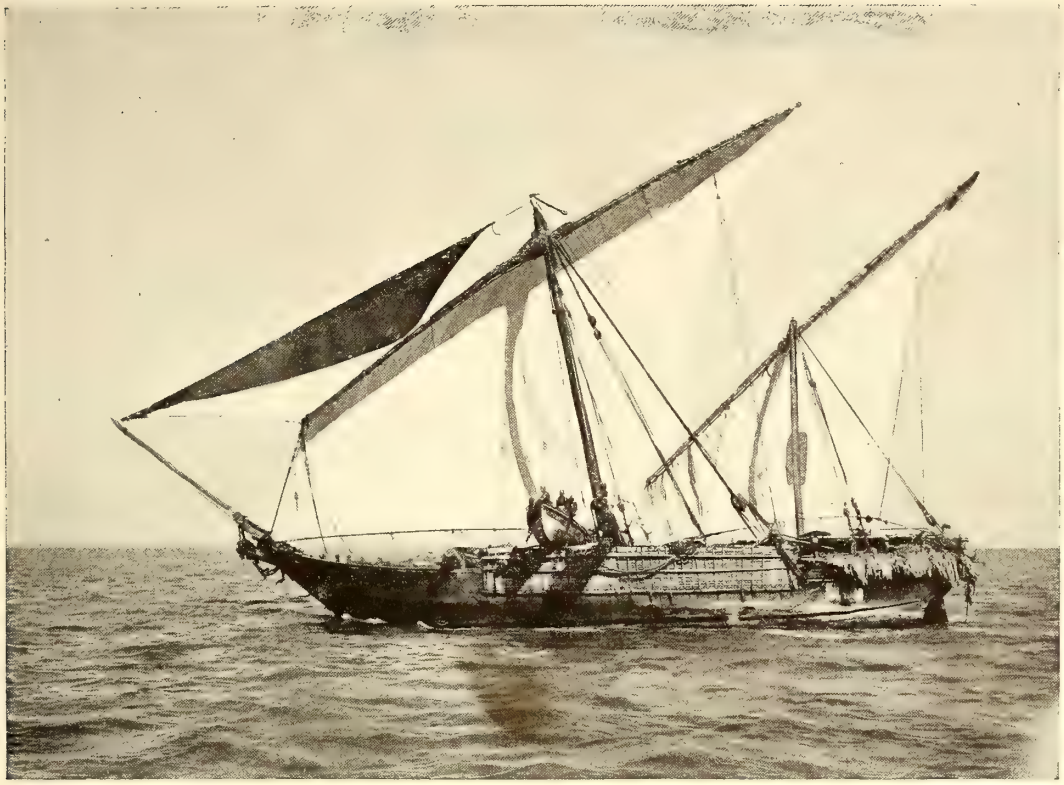

FIG. 1. A BATTELA WITH BOAT RIGGED OUT AS COUNTERPOISE.

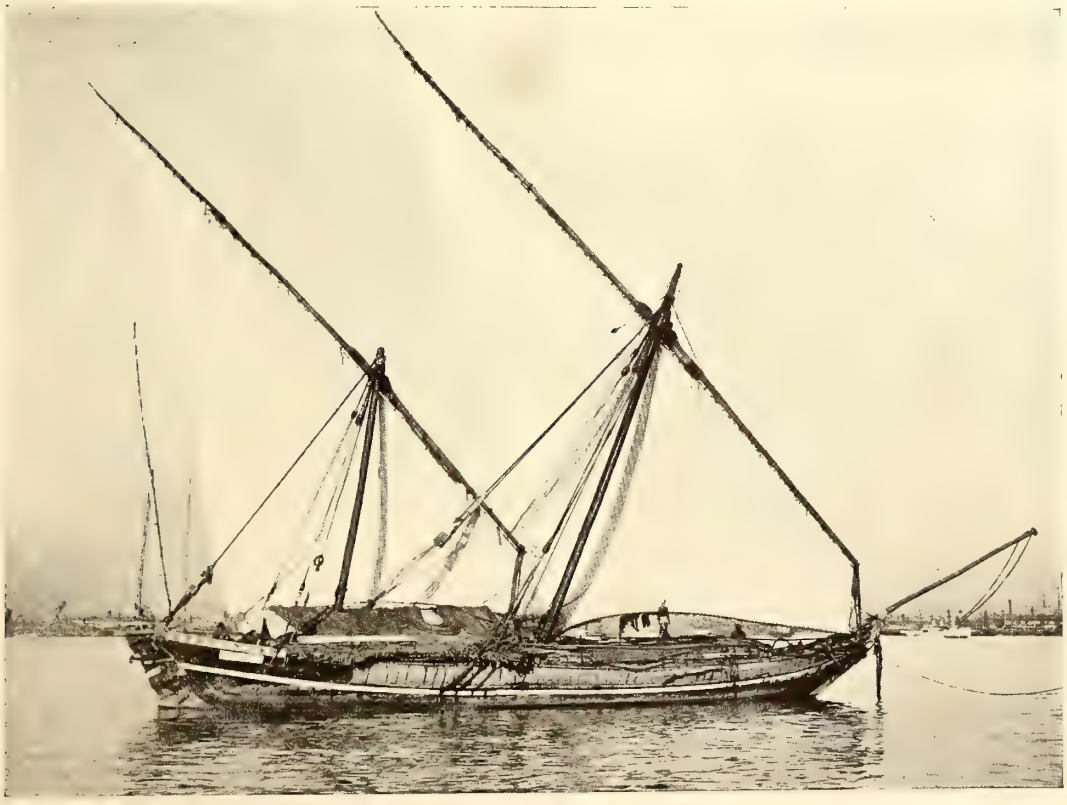

FIG. 2. A LARGE PATTIMAR FROM MALWAN.

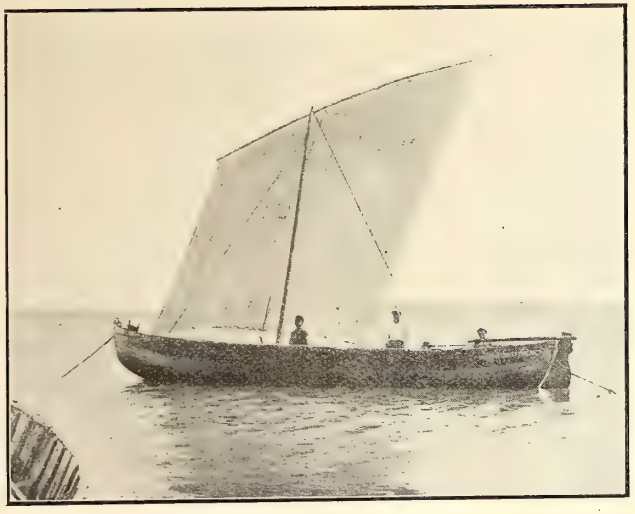

Fig. 2. A Tuticorin fishing-canoe.

Fig. 1. A cargo lighter, Tuticorin.

Fig. 4. Mangalore backwater cargo carriers.

Fig. 5. A two-masted fishing boat, Chilka Lake.

Fig. 6. Small coracles on River Bhawani, South India.

Fig. 3. Tuticorin spread-canoes.

Fig. 5 from photograph by Dr. Annandale. The others from photographs by J. Hornell.

Fig. 1. Puja to Siva being performed aboard a Jaffna dhoni.

Fig. 3. Stern and bows of a Kalla dhoni, Pt. Calimere. The oculus incised.

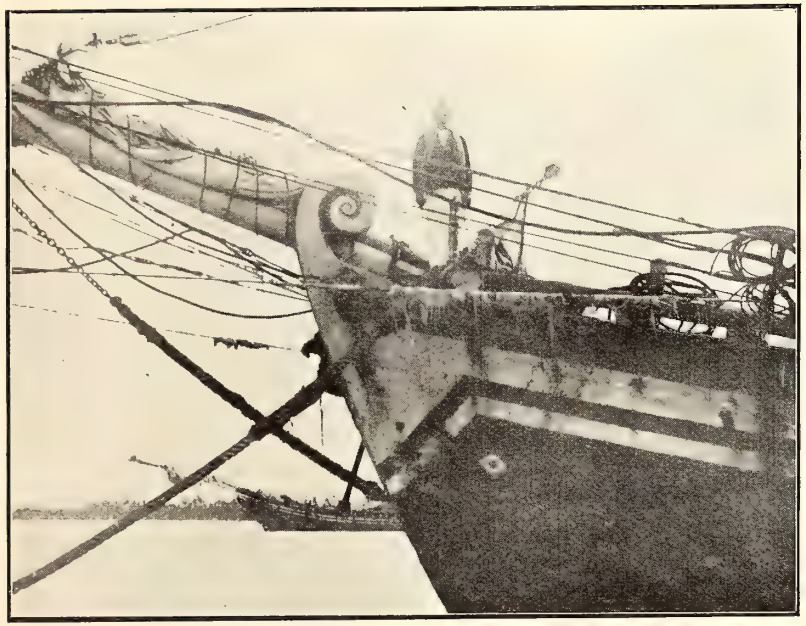

Fig. 2. An "eye" nailed to the bow of a Jaffna dhoni.

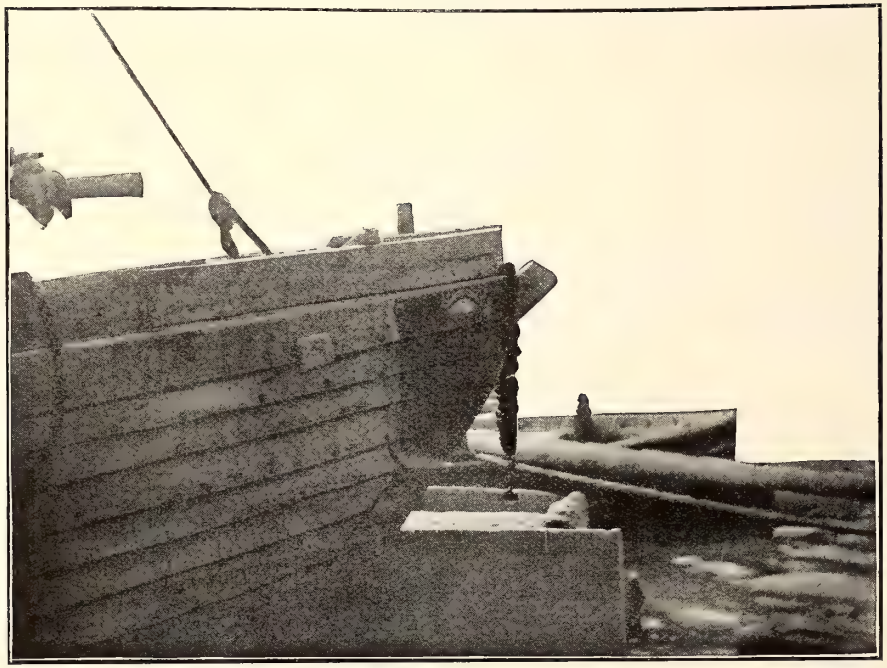

Fig. 4. Fore end of a Ganges cargo-boat, Benares, showing an "eye" in brass.

From photographs by J. Hornell.

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MEMOIRS

OF THE

ASIATIC SOCIETY OF BENGAL

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INTRODUCTION TO THE STUDY OF THE FAUNA OF AN ISLAND IN THE CHILKA LAKE.

BY

N. ANNANDALE, D.Sc., F.A.S.B., *Zoological Survey of India.*

WITH A LIST OF THE PLANTS.

BY

V. NARAYANASWAMI, M.A., AND H. G. CARTER, M.B., *Botanical Survey of India.*

Smithsonian Institution
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By N. Annandale, *D.Sc., F.A.S.B., Zoological Survey of India.*

With a List of the Plants.

By V. Narayanaswami, M.A., and H. G. Carter, M.B., *Botanical Survey of India.*

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PREFATORY NOTE.

I have known Barkuda Island in the Chilka Lake for over seven years and have from time to time made collections upon it and studied its fauna with an ill-defined end in view. In the summer and autumn of 1919, for three months of which (August, September and October) I made the island my head-quarters, and again in December of the same year and in April, June, July, August and September, 1920, an opportunity occurred to undertake more concerted investigations, and I attempted to carry out an intensive zoological survey. In doing so I realized that

my attempt would probably be difficult of accomplishment. I knew that it would be impossible, however generous the aid obtained from specialists in India and abroad, to complete a survey of a similar area of tropical jungle, or even of cultivated land on the mainland, without many years of collecting, study and correspondence; but I also knew that the fauna of a small rocky island was likely to be, and indeed was, much poorer than that of any fertile spot on the mainland, and I hoped against hope.

The hope was not fulfilled. Large collections and copious notes were made, but the constant changes observed in the fauna in correlation with changes in the weather and in the vegetation stood in the way of regarding these as completely representative, much less exhaustive. So many groups of insects and other animals were, moreover, to be considered, even though there were often only a few species of each, and the assistance of so few taxonomists could be obtained, that I despaired of obtaining authentic identifications. Finally, I realized that in order to study the fauna in a comprehensive spirit I must first study the vegetation, the physical structure, the palæontology and the climate of the island.

It has been my experience that a biological memoir of faunistic scope loses in ultimate value with delay in giving it literary form. Field-notes at best are mere sketches for a finished picture, and from them the observer himself must select, combine and elaborate to produce an organic whole. Unless he has had practical experience of taxonomy it is difficult if not impossible for him to know what to select. It is very seldom that he can obtain all the "results" due to workers on other lines without long delay, in the course of which his perception of the main thesis becomes dulled and blurred by other investigations and, should he belong to a Government department, by the exigencies of an official career. It has been held that taxonomic zoology should be divorced completely from field biology. This seems to me a singularly narrow view, liable to stand in the way of all progress in scientific taxonomy.

For these reasons I have decided not to wait for the preparation of reports on various elements in the fauna by specialists in India, Europe and America. These will, I hope, be published elsewhere later. A report on the physiography, palæontology and botany of Barkuda will form the most fitting, if not the only useful, introduction to a study of its fauna.

In preparing this introduction I have had generous help from members of other scientific departments of the Government of India. I have to thank Lieut.-Col. A. T. Gage, Director of the Botanical Survey of India, and Mr. C. C. Calder, who is at present officiating for him, for instructing Mr. Narayanaswami to prepare the list of plants from which I derive the identifications utilized in my study of the vegetation. This list has been partly revised and greatly amplified by Dr. H. G. Carter, Economic Botanist, Botanical Survey of India, who accompanied me to Barkuda in April, 1920. I have also to thank Dr. E. H. Pascoe, of the Geological Survey of India, for a valuable note on rock-specimens incorporated in my report. To Mr. E. Vredenburg of the same department I am further indebted for equally valuable notes and suggestions. He visited Barkuda with me in September, 1920.

I. PHYSIOGRAPHY OF THE ISLAND.

Geographical Position and Area.

The little island of Barkuda or Barakuda is one of many that stud the surface of the Chilka Lake on the east coast of India. Its geographical position is lat. 19°38′N., long. 85°12′E. and it lies in the north-eastern apex of the Madras Presidency just across the Orissa border.

The lake[1] is a maritime one, connected with the Bay of Bengal by a narrow mouth and consisting of a complex outer channel and a broad main area some forty miles long. It is in the main area, towards its inner (south-western) extremity, that Barkuda is situated. The water[2] of this area varies greatly in salinity with time and season. At Barkuda it is never quite fresh, but never nearly as salt as that of the open sea, and is not affected at any season by the tides. The lake is shallow over its whole area and at no point in the vicinity of the island more than 15 feet deep.

Barkuda is separated from the mainland of the western shore of the lake by a channel just a mile broad, but that which separates it from the larger, alluvial island of Samalkuda, which in dry weather becomes a peninsula owing to the desiccation of the narrow strait between it and the mainland, is less than half as broad. Samalkuda lies north and north-east of Barkuda. Almost due west, at a distance of about half a mile, lies another island, Cherriakuda, which is of similar size and formation to Barkuda. From the sandy outer shore of the lake Barkuda is separated by at least three miles of open water and from the head of Rambha Bay, the south-western extremity of the whole system, by nearly five.

In outline Barkuda is a right-angled triangle with the apex pointing nearly south-east. Its longest side is about three-quarters of a mile in length and its shortest less than half as long. Its total area is less than half a square mile.

The island is thus isolated so far as purely terrestrial animals are concerned, but well within the range of insects even of rather feeble flight, and also of many seeds.

Climate.

No very precise data are available as to the climate of the Chilka Lake, which is subject to obvious local peculiarities and apparently varies considerably at different spots in respect both to temperature and rainfall. The whole area lies well within the isothermal lines representing 79° and 80° Fahr.[3] and within the region affected directly by the south-west monsoon. The climate is, therefore, tropical, but Barkuda has a more equable temperature than that of the mainland, a mile or two away. The heat is less in summer and the air is warmer in winter. This is doubtless due to its insular position.

The following particulars about the rainfall at Rambha, five miles south-west of the island, are extracted from the official reports of the Imperial Meteorological

---

[1] See Annandale and Kemp, *Mem. Ind. Mus.* V, p. 1 (1915).

[2] See Annandale and Kemp, *op. cit.* and Sewell, *Mem. Ind. Mus., tom. cit.* (*ined.*).

[3] See Eliot, *Climatological Atlas of India*, pl. xlix.

Department, for an advance copy of which I have to thank the Director General of Observatories; but the rainfall of Barkuda is considerably less than that of Rambha, for a large proportion of the rain-storms that break on the mainland do not reach it. In the rainy season between June and October these storms may be observed almost daily making their way up the valley that extends from Rambha Bay in a south-easterly direction. Before reaching the lake, however, a very large proportion of them split into two and while one half makes its way along the hills that lie a short distance inland from the shore, the other proceeds along the sand-banks on the sea-coast. Only the very edge of the clouds among the inland hills reach out to Barkuda. The same phenomenon has been observed in the spring and autumn thunderstorms. The hills are often hidden in black masses of vapour, loud peals of thunder are heard and vivid flashes of lightning seen without a drop of rain falling on Barkuda.

Nevertheless, though the rainfall of the island is thus restricted, the air is damp from July to October and the rain that does strike the island is sufficient to soak the scanty soil and often to reduce it to mud for some days at a time.

RAINFALL AT RAMBHA.

Month.	Average.	1913.	1914.	1919.
January ..	0·27	..	..	1·69
February ..	0·80	0·25	..	1·84
March ..	0·90	..	..	..
April ..	1·01	..	1·27	2·11
May ..	1·69	2·38	12·27	3·11
June ..	5·51	7·64	10·59	9·75
July ..	7·41	12·99	4·37	8·54
August ..	7·54	7·10	8·43	10·45
September ..	8·19	3·65	20·60	1·49
October ..	8·79	8·60	0·93	6·55
November ..	2·43	3·70	..	16·57
December ..	1·08	..	..	..
Total ..	45·62	46·31	58·46	62·10

The question of the direction of the wind over the island may clearly have a bearing on the immigration and dispersal of its fauna, but here again no precise data are available.

For five months in the year (April to August), the prevailing direction on the neighbouring coast is S.W. or S.S.W., and this may be taken to be so also on the lake. Even at other times of the year south-westerly winds are the most frequent on Barkuda, but the heaviest storms are from the south-east or east. As a rule the breeze, from whatever direction it may be blowing, drops considerably in the evening and does not rise again until about 9 a.m., but in unsettled weather the wind is often stronger at night.

Structure.

The physical structure of the island is very simple. The surface is nowhere more than 30 to 40 feet above high flood-level. In the interior the rock is for the most part covered with a thin layer of red soil, but on the foreshore, of which a considerable area is exposed as the floods recede in autumn after the end of the monsoon rains, it crops up on the surface round a great part of the periphery of the island, and even inland there are stony and rocky areas with hardly any soil. Almost the whole of the sheltered northern foreshore is sandy, the sand being of a very coarse consistency and of a whitish colour, while on the east side, which is more exposed to violent wave-action than the others, a good deal of sand is also present, but is mixed with coarse gravel and small stones and with occasional outcrops of rock. The origin of the sand on the two sides is probably different. On the north side it has accumulated gradually owing to the currents which sweep round the island, while on the east side it has been formed *in situ* by the breaking up of the rocks in stormy weather.

Mr. Vredenburg has favoured me with the following observations on the geological formation of the island:—

"The island appears to be roughly triangular with a straight southern coast trending approximately east-west, an eastern coast trending approximately north and south, while from the north-eastern to the western corner of the island, the general trend of the coast is from north-east to south-west.

Along or near the south coast rock is everywhere exposed in the form of an abrupt low escapement. This escapement is essentially of the nature of a true scarp though the structure is mostly concealed by the confused disposition of the broken blocks. This breaking up of the low scarp is probably to be accounted for by wave-action, which may have been more effective at a time when the relative level of the water was higher than at present.[1] The escapement is now mostly overgrown by forest.

The eastern coast exhibits a succession of rocky promontories probably constructed by the more resisting strata, between which are embayments in which the rock is concealed by detrital soil and sand.

Along the northern or north-western coast which, in places, must more or less coincide with a dip slope, the rock, with the exception of some insignificant shows

[1] In stormy weather it is still more considerable than could be realized in calm weather, such as that in which Mr. Vredenberg examined the rocks.—*N. A.*

near the north-east corner, is everywhere concealed, the land slopes gently towards the water and the shore is occupied by a sandy beach.

Throughout the interior of the island, the rock is concealed by a thin covering of red soil which, nevertheless, is full of fragments of a material similar to that seen where the rock is exposed *in situ*. Moreover the same rocks invariably re-appear wherever the soil has been removed by artificial excavations.

The geological constitution is very uniform. The whole island appears to be built of stratified rocks, consisting of garnet-bearing quartzites with or without sillimanite, as has been ascertained microscopically by Dr. Pascoe. The strike of the bedding is uniformly east by about 10° north, the dip northerly at low angles. The amount of dip observed along the banks of an artificial pond about the centre of the island is between 15° to 20.° Usually the angles are even lower. They are

TEXT-FIG. 1.—Rocks at the north-west corner of the island.

generally less than 10° along the east coast. Similarly low angles were observed at the western corner of the island. Local undulations may occasionally cause the lie to becoming horizontal, or may even bring about a temporary reversal of the dip towards a southerly direction. An instance may be observed on the south coast east of the landing pier. Sharp contortions are observed occasionally, for instance at the north-east corner of the island, and, to a minor extent, at its western extremity.

The rocks clearly consist of altered sedimentary formations. They are referable to T. L. Walker's 'khondalite series' and belong to the older division of the 'Transition rocks of Peninsular India.'

The rock of the whole island has a very uniform appearance. In ordinary circumstances its surface is of a dull yellowish colour, often tinged with ferruginous brown. Though hard it is coarsely granular. On weathering it breaks up into

relatively small, usually rectangular blocks as a rule much broader than deep. This is owing to the fact that it is separated by the planes of stratification into well-defined layers mostly less than a foot deep and traversed in a vertical direction by narrow veins of softer consistency than the bulk of the rock. There is none of the piling up of great blocks into pyramids so conspicuous in the surface formation of many of the hills and headlands of the neighbourhood.

A small pond has been dug near the middle of the island. Its water-level differs greatly at different seasons and in the early autumn a considerable depth of rock is submerged which becomes dry in winter. The surface of this rock, unlike that submerged in the brackish water of the lake at the same season, weathers black. The water of the pond is very nearly fresh when it is full, and only slightly saline when it has sunk to its lowest level."

I have to thank Dr. E. H. Pascoe, of the Geological Survey of India, for the following note on rock-specimens :—

"The rock specimens from Barkuda Island, Chilka Lake, consist of two extreme types of quartz-schists with intermediate forms. On the one hand, you have a garnet-quartz-schist or, as T. L. Walker calls it, a garnetiferous quartzite, and, on the other hand, a khondalite. In the former the bulk of the rock consists of quartz while the garnets vary in size and number and, in the specimens under consideration which are evidently from near the surface of the ground, are much weathered; one specimen shows pronounced foliation. In the khondalites or garnet-sillimanite-schists, the quartz ground-mass is very much crushed, the garnets weathered and the sillimanite mostly in large disjointed parallel needles. These rocks, according to T. L. Walker who gave them their name, are paragneisses, representing in all probability ancient metamorphosed sediments. Owing to the absence of felspar, the soil derived from the rocks described would consist of a ferruginous sand with scarcely any true clay and very little soluble food for plants. Similar schists are found over a great part of the Ganjam Malias in Kalahandi, along the eastern border of the Eastern Ghats in Vizagapatam, in Coorg and elsewhere."

Changes in Water-level on the Shore of the Island.

The changes in water-level on the shore of the island are of importance in reference to the fauna of the foreshore. They are of two kinds, seasonal and occasional. The seasonal changes vary in extent from year to year in correlation with the rainfall in the basin of the Mahanadi, a branch of which enters the northern part of the lake, and also in all probability with the size and position of the sea-mouth, which vary as a result of changes in the currents on the coast and other factors of which at present we know little. In a normal year the water is highest about the middle of September, but occasional floods may raise it temporarily still higher earlier in the year. It begins to rise as soon as the south-west monsoon is well established, sinks as the rains diminish and is at its lowest in June just before they commence. The area then left bare on the shore is considerable, but variable in area from year to year.

There is no tide at Barkuda and we have no evidence of the existence of any constant diurnal movements of the water. Distinct occasional changes in level are, however, often due to the wind. A steady breeze from the south-west drives the water of the Rambha Bay past the island and often causes the level to sink by two or three inches. As a breeze of the kind as a rule sinks in the evening the water returns at night and is higher on a calm morning than it is after a breezy day. On the other hand I have known the level to rise at least five inches in the course of a day owing to a storm north-east of the island which banked the water up round it.

Major R. B. Seymour Sewell, I.M.S., Surgeon Naturalist, Indian Marine Survey, has described the hydrography of Rambha Bay in a paper to be published in Vol. V of the *Memoirs of the Indian Museum*. This paper will throw much light both on these phenomena and also on the piling up of dead weed on the shore of the island and the consequent formation of free sulphur as a result of the action of a bacterium on the decaying matter.[1] The chain of events is of faunistic importance, because it has prevented the existence of a true marginal fauna of amphibious molluscs and Crustacea such as is frequently found in similar situations.

II. PALÆONTOLOGY.

The rock of Barkuda is non-fossiliferous but the soil of its interior and the sand of its shore contain large numbers of molluscan shells that may be classed as sub-fossil and utilized to throw some light on the age of the island. Before describing the shells I must refer to the store of specimens now being laid up for future palæontologists by two pairs of sea-eagles (*Haliaëtus leucogaster*) that have made the island their home. These birds, as is a common habit of the species, nest in large Banyan trees and do not desert their nesting-place when the breeding-season is over but remain constant to it throughout the year. They catch their food in the lake and bring it home to devour. Their prey consists mainly of three items, the sluggish water-snake, *Chersydrus granulatus*, the swimming-crabs, *Scylla serrata* and *Neptunus pelagicus*, and the fish, *Triacanthus brevirostris*, perhaps the most abundant in the lake. Fish of several genera of Siluridae are also captured. The snakes the birds swallow whole as a rule, but the ground under the tree in which they live is covered with the remains of fish and the broken claws of crabs, and scattered bones and claws that they have dropped can be found on almost any part of the island. Triacanthus is a laterally compressed fish with a very solid skeleton and with three long and stout bony spines that have given the genus its name. One of these is situated in the dorsal fin, while one on each side of the lower part of the body represents the pectoral fin of that side. To give support to the lateral spines, which can be 'locked' in such a way that it is impossible to press them together against the sides without breaking them, the pectoral girdle is greatly strengthened, while the skull is also remarkably hard and bony and has in lateral view a curious superficial resemblance to that of a land-tortoise. The three spines, the skull and the pectoral girdle are connected in

[1] Annandale, *Proc. As. Soc. Bengal*, XIV (n.s.) (1918), pp clxix-clxx.

such a way that they naturally cohere when the muscles of the fish rot or are removed, and as the eagles are somewhat dainty in their feeding and only pick off the softer and more accessible parts of the fish, this region of the skeleton remains, often in perfect condition, and must in the course of time, if natural processes persist without violent interruption, become a characteristic fossil.

These facts are not without a bearing on the subfossil shells of the island, for they suggest the questions: How far is the accumulation of them due to inanimate forces, and is it possible that the molluscs they represent were originally brought together by some animal, or even by man?

The shells found in a subfossil state on Barkuda belong to five species, two of Gastropoda and three of Pelecypoda or Lamellibranchiata.

List of the Molluscan Shells found Subfossil on Barkuda.

Gastropoda.	Pelecypoda.
Potamides (*Tympanatonos*) *cingulatus* (Gmelin).	*Arca* (*Anadara*) *granosa*, L.
Cuma disjuncta, sp. nov.	*Sunetta scripta* (L).
	Meretrix casta (Chemn).

Three of these species, the Potamides, the Cuma and the Arca still survive in the lake—or rather did so a few years ago, for considerable changes have apparently taken place in the fauna since 1914.[1] No difference between recent and subfossil shells of *P. cingulatus* and *C. disjuncta* has been discovered, but the Arca has been profoundly modified. *Sunetta scripta* is a common species on the sandy coast of Orissa but has not been collected in the lake, while the *Meretrix casta* apparently belongs to an extinct race, shells of which are common in comparatively recent brackish-water deposits on the east coast of India. Before discussing the significance of these facts it will be as well to give an account of the species.

GASTROPODA.

Family Cerithiidae.

Potamides (Tympanotonos) cingulatus (Gmelin).

1916. *Potamides* (*Tympanotonos*) *fluviatilis*, Annandale and Kemp, *Mem. Ind. Mus.* V, p. 344.

This species is, on the coasts of India, a common and characteristic mollusc in backwaters and lagoons, the water of which is of comparatively low and variable salinity. In the Persian Gulf it is marine. In 1914 it was found living in all the parts of the Chilka Lake in which the bottom was composed of sand or sandy mud, except along the inner shore. It was not uncommon in a ditch at the head of Rambha Bay. On Barkuda subfossil shells occur, in no great abundance, in the soil of the interior of the island, sometimes alone, sometimes with *Meretrix casta*. These shells do not differ in any way from fresh specimens from the lake. Many of them have a curious thickened broad and ill-defined varix on the body-whorl a short

[1] See Annandale, *Rec. Ind. Mus.* (*ined.*).

distance behind the mouth, but this peculiarity is also common in living individuals from the same lagoon.

Some shells from Barkuda are bleached and worn, but others are in perfect condition and even retain traces of the natural colours. On none of them is there any trace of oyster-spat, which frequently adheres to the shells of individuals living in the outer channel of the Chilka Lake.

The species also occur in an apparently subfossil condition at the head of Rambha Bay.

Family Muricidae.

Genus **Cuma** (Humphrey), Swainson.

1887. *Cuma* Cooke, *Journ. Cronch*, V, pp. 162-172.

Cuma disjuncta, sp. nov.

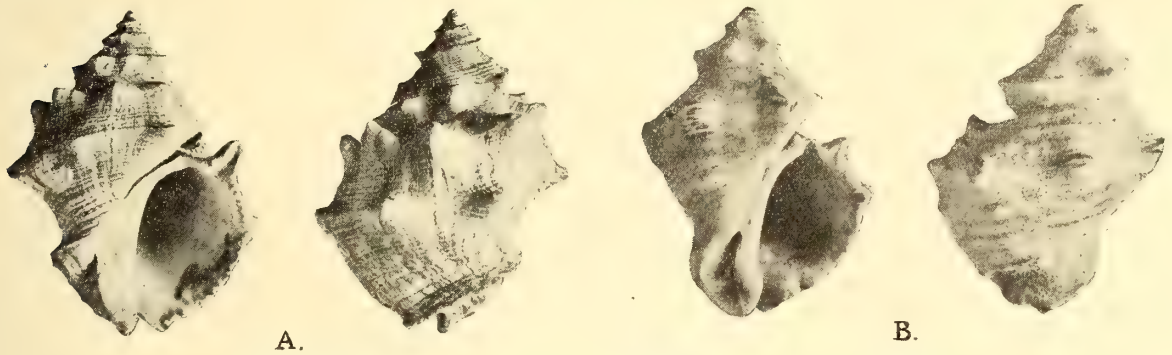
1915. *Thais carinifera*, Annandale and Kemp (*nec Purpura carinifera* Lamarck), *Mem. Ind. Mus.*, V, pp. 343, 344, fig. 2 (egg-capsules).

In the collections of the Zoological Survey of India this species has hitherto been confused with *C. carinifera* (Lamarck) and *Purpura bitubercularis* (Lamarck). It is, however, distinguished by well-defined and constant characters from both, though its closest ally is *C. carinifera*.

The shell is thick, of rather small size, dirty white, irregularly streaked with deep purple when young, fading to a uniform obscure pale greyish-clay colour when mature. There are seven whorls, the first two of which, representing the protoconch, are minute, smooth, convex and transverse, with the suture impressed and linear. The sculpture of the adult shell makes its appearance on the third whorl, which is ornamented with a stout, somewhat nodular median spiral ridge with several more delicate and smoother ridges traversed by strong longitudinal striae, above and below. This whorl is also transverse but less convex than those of the protoconch. The suture below it and the other whorls of the spire is not impressed, but, indeed, almost obsolete. The fourth whorl is divided horizontally into two regions by the median ridge, which is considerably stronger than that on the third whorl. The region above this ridge slopes outwards and downwards, while the lower region is almost vertical but becomes gradually constricted below. All these features are more prominent on the remaining whorls of the spire, which increase rapidly in size. The sculpture also becomes stronger and on the sixth whorl the median ridge is broken up into a series of blunt triangular projections. The spire as a whole is broadly pyramidical, with broken outlines and a sharp apex. The body-whorl is very irregular in shape. Above its older half the suture remains normal and the spiral of the upper whorls is continued, but at about one-thirds the width of the completed whorl an abrupt change takes place, the suture becomes deeply canalized and the body-whorl reaches outwards in such a manner that a deep notch is left above it in the dorsal outline of the shell. Viewed by itself this whorl forms almost an equilateral triangle in this aspect. Immediately outside the suture there is a narrow almost transverse, slightly concave area. This is followed on the upper half of the whorl by two spiral series of blun-

triangular processes separated by an interval slightly greater than the width of that part of the whorl that lies above them. There are about seven processes in each series, the upper of which is sometimes obsolete except for a single process on the lip. They vary somewhat in size and direction, but those of the upper row are always pointed upwards and slightly outwards. The whole surface of the whorl, including that of the processes, is covered with spiral ridges interrupted by longitudinal grooves in such a way that a chequered pattern is formed. Towards the base of the shell one (or sometimes two) of the ridges is usually prominent and below it a deep broad, oblique transverse hollow is formed. The siphonal notch is relatively long and visible from above.

The mouth of the shell is a little oblique, narrowly oval, produced above into a well-defined vertical notch and below into the siphonal process. Outside the former it sends a channel obliquely outwards into the last triangular process of the upper row. The outer lip is rather sharp, finely crinkled and crenulate or almost smooth. The



TEXT-FIG. 2.—Shells of *Cuma disjuncta*, sp. nov. (nat. size).
A. Type-specimen from the Andamans.
B. Fresh specimen from the Chilka Lake.

columella is straight, vertical and sharply pointed, its callus coarse and procellaneous. Beyond the callus the shell is narrowly rimate and beyond the chink its base is ornamented with numerous curved and sinuate grooves and ridges.

Measurements (in millimetres) *of Shells.*

	Type (1)	(2)	(3)	(4)	(5)	(6)	(7)
Height	42·5	38·3	35·0	40·6	40	18·8	5·0
Max. diam.	33·4	27·2	27·0	30·0	27·2	13·5	3·5
Height of mouth	21·2	16·5	15·5	19·0	16·5	10·0	2·8
Max. diam. of mouth	12·5	10·5	9·6	10·8	9·0	4·5	1·2
Spire (dorsal view)	12·5	12·7	11·2	11·6	12·5	..	..
Max. diam. to height	1 : 1·27	1 : 1·33	1 : 1·3	1 : 1·35	1 : 1·43	1 : 1·39	1 : 1·43
Diam. to height of mouth	1 : 1·7	1 : 1·57	1 : 1·61	1 : 1·76	1 : 1·83	1; 2·22	1 : 2·33
Diam. mouth to max. diam.	1 : 2·67	1 : 2·59	1 : 2·81	1 : 2·78	1 ; 3·02	1 : 3	1 : 2·92
Spire to total height	1 : 3·4	1 : 3·01	1 : 3·12	1 : 3·44	1 : 3·2	..	..

In the type-specimen, therefore, the height of the shell is about $1\frac{1}{4}$ times the maximum diameter, which is about $2\frac{1}{10}$ that of the mouth; the height of the spire is

contained $3\frac{2}{5}$ in the total height and the height of the mouth is a little more than $1\frac{1}{4}$ times its maximum diameter.

Type-specimen (from the Andamans.) No. $M\frac{1\,1\,6}{2}\frac{7\,0}{}$ Z.S.I. (Ind. Mus.).

Geographical Distribution. Andaman Is., Bay of Bengal; Chilka Lake, Orissa and Ganjam district, Madras; ? Cochin backwaters, west-coast of India (young shells only examined); Trincomali, Ceylon; the Maldive Islands; Bombay, and Penang.

The species is distinguished from Lamarck's *Purpura carinifera* not only by its usually smaller size, its duller colouration and narrower and smaller shell-aperture, but also by the curious change in the spiral above the body-whorl. This is a constant feature in a large series, recent and subfossil, from the Chilka Lake and is equally well shown in the type-specimen,[1] a single shell from the Andamans. From Bombay and other localities I have seen shells of both species, but have no information as to the circumstances in which they were found.

The type-specimen is a little larger, broader and thinner than those from the Chilka Lake and has the sculpture much sharper. I can detect no definite difference between recent and subfossil shells in the latter locality, but the subfossil shells are usually smaller. A very large but much worn specimen from the Maldives is 65 mm. high by 48 mm. broad.

PELECYPODA.

Fam. Arcidae.

Arca granosa, L.

1916. *Arca (Anadara) granosa*, Annandale and Kemp, *Mem. Ind. Mus.*, V, p. 350. pl. xvi, figs. 3–6.

1918. *Arca granosa*, Annandale, *Mem. As. Soc. Bengal*, VI, p. 318, pl. x, figs, 14–17.

As is pointed out in the papers cited, the race of *Arca granosa* that now lives in the main area of the Chilka Lake, or did so in 1914, differs greatly from the one found subfossil on Barkuda and at various places on the shores of the lake. In the collection of the Indian Museum, which includes a considerable number of specimens of the species from Japan, China and the Malay Peninsula as well as from the Indian coasts, I have found examples of at least four distinct types, which I shall call for the present types A, B, C and D.

Type A. This type is represented only from the Andaman and Nicobar Is. in the Bay of Bengal. Its most characteristic feature is the great size of the shell, which is sometimes over 75 mm. in breadth. The shell is moderately thick. The breadth is distinctly but not much greater than the height and the diameter of the two valves together is a little less than the height. Thus in a shell from the Andamans 74 mm. in breadth the proportions are height to breadth 1 : 1·15, diameter to breadth 1 : 1·3, diameter to height 1 : 1·12. The shell is distinctly inequilateral, though much less so than in some species of the genus, and is as a whole transversely oval. The periostracum is blackish and the ribs are divided into small flat ridges by almost equidistant, rather deep transverse grooves.

[1] The notch in the outline produced by the change of direction is concealed in the photograph here reproduced by one of the processes on the body-whorl.

Type B. This type is common in a subfossil condition round the Chilka Lake and fresh valves with remains of the periostracum have been found in the Ennur backwater near Madras. The majority of our specimens from India and Ceylon can be referred to it. The shell is always considerably smaller than in type A, never exceeding 65 mm. in width. It is possible that I have included in it two types really distinct and representing different periods, so far as the Chilka Lake is concerned, in the history of the species, but intermediate individuals occur in the Ennur backwater and the Chilka deposits have been too much disturbed to afford precise data. In some shells from these beds the outline is subtriangular, with the beak narrow and produced and the breadth slightly greater than the height, but in others the shape is transversely oval, the beak more tumid and shorter and the breadth considerably greater than the height. Typical shells of these two phases are shown in figs. 5 and 3 respectively on pl. xvi, *Mem. Ind. Mus.*, V. The periostracum in this form is apparently brownish and the shell sculpture is not strongly developed. Shells of the subtriangular form are, at any rate in some specimens, considerably thicker than transversely oval ones, which are often much thinner than normal. Further information is desirable about these two forms of shell.

Type C. The specimens of this type that I have seen are all from the markets of Shanghai and Singapore. At the former place they were said to be brought from Ningpo, and at the latter to be procured locally in the harbour. The shell is much smaller than in type B, more equilateral and broader in proportion to its height. Large specimens are not more than 27 mm. broad and the approximate proportions of those of this size are height to breadth 1 : 1·5, diameter to height 1 : 1·1–1·2, diameter to breadth 1 : 1·35–1·60. The transverse axis of the shell is also more oblique than in type B and the beak is smaller and less swollen. The sculpture of the ribs is more pronounced and has a nodular character. The periostracum is blackish. The shell is rather thin but not attenuated.

Type D. My specimens are from the Chilka Lake, the Cochin backwaters on the west coast of India and the market of Moo-too, a village near the Tai Hu Lake inland from Shanghai. Similar shells are sold in the markets of Shanghai and both there and at Moo-too are said to come from Ningpo. They are, however, sold separately from those of type C. They can be distinguished by their still smaller size, less inequilateral outline, more swollen beaks and almost spiny costular sculpture. It is possible that the Chinese shells (var. *minuta* Neumeyr) I assign provisionally to this type are merely young of type C, but I believe that those of the Chilka Lake are certainly distinct.[1] In the latter the characters I have enumerated are more marked than in the former. The valves are also less swollen and the periostracum pale brown in colour. My specimens, however, are too few to provide reliable data as to proportions. The difference may be seen in a general way by comparing fig. 6,

[1] Dr. Ekendranath Ghosh, who is studying the anatomy of the Arcidae, tells me that the sexual organs are mature in a specimen from the Chilka Lake with the shell 9 mm. high, 12 mm. broad and 9 mm. thick. He regards the recent Chilka form as specifically distinct from the true *A. granosa*.

pl. xvi, Vol. V., *Mem. Ind. Mus.*, with figs. 14–16, pl. x, *Mem. As. Soc. Bengal*, Vol. VI.

Unfortunately we have very few precise data as to most of the specimens of this species examined, but I think that we may safely take type A as the true marine phase and assume that all the others are either from water of lower salinity than the open sea or from water abnormal in other respects as regards chemical composition. Further, the smallest shells examined, those found fresh or living in the Chilka Lake, are certainly from water of very low and variable salinity and are very much smaller than those found subfossil in the same neighbourhood. They are also distinctly broader in proportion to their height, more nearly equilateral and in some instances distinctly thinner.

It is natural to compare what little we know of the plasticity of *Arca granosa* with Bateson's[1] well-known account of the cockle-shells of the Sea of Aral and the Nilotic delta, for, though *Cardium edule* and *Arca granosa* are very distinct in anatomical structure, there is a remarkably close superficial resemblance between their shells. It must be noted, however, that the physical changes correlated with changes in shell-form, etc., in the two species have taken place in opposite directions, for while in the cockle these changes occurred as an apparent result of concentration of the salts dissolved in the water in which it lived, in the Chilka Lake we are dealing with a decrease of salinity.[2] It may be accepted as a fact that the phase of the Arca that survived in the lake in 1914 was dwarfed and had a thinner, more transverse, more swollen and less inequilateral shell than that of those known in a subfossil condition on the shores and islands; but whether the production of this phase was directly connected with decreased or more variable salinity, or due to some other factor such as the deposition of alluvial silt on the bottom, we have as yet no information to show.

Shells of type B of *Arca granosa* are not uncommon on the sheltered northern shore of Barkuda but are usually broken and always more or less waterworn. A few were also found in a fragmentary condition with those of Meretrix in the soil of the island. I can detect no difference between these shells and specimens from the beds at the head of Rambha Bay and from the shores of the outer channel of the lake. Recent shells from the Ennur backwater near Madras are also similar, but are not so readily separable into two subtypes.

Fam. Veneridae.

Meretrix casta (Chemnitz).

1917. *Meretrix casta* (with vars.) Hornell, *Rec. Ind. Mus.* XIII, pp. 166–73, pls. iv, v, vi.

The phase of this species found subfossil on Barkuda may be included in the race *satparaënsis* as defined by Hornell in the paper cited. As to the status of this race I cannot do better than to quote what he says:—

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[1] Bateson, *Phil. Trans. Roy. Soc.* B, LXXX, p. 297 (1889).

[2] Annandale & Kemp, *Mem. Ind. Mus.*, V, p. 5 (1915).

"The substance of shells from west coast estuaries is distinctly thinner than that of those from the east coast, due possibly to a smaller lime content in the west coast rivers. Here I should mention that much of the variation found in the form and proportions of the umbones and hinge region of *M. casta* is due to the effect upon the size and relative relationship of these parts, caused by the exceedingly variable rates at which the shell increases in thickness under different conditions. Exceptionally rapid growth in thickness tends to produce a humped and corbicular shape, while rapid growth in length and breadth with slow deposits of lime salts give a compressed form with flat umbonal region. Under certain conditions not now prevailing, but which existed at the very recent geological period when the shell-pits of swamps round the margins of the larger backwaters of the eastern coast were being formed, the deposit of lime salts must have progressed at a greater rate than the most rapid now existing, for in these subfossil deposits we got an immensely massive form of *M. casta*. This shell at first sight appears so different in hinge form and in general shape from the type of *M. casta* that one does not hesitate to treat it as a different species. Hence we find Preston describing it as a Cyrenid under the name of *Corbicula* (*Velorita*) *satparaënsis*. He saw some cause to modify this opinion later and in *Rec. Ind. Mus.*, XI, p. 300, he rightly assigned it to *M. casta*. In this I agree with him, after a comparison of a large series of young individuals of the massive form as opposed to those of the type. This gave conclusive evidence of identity, as the extreme comparative solidity of the variety is rapidly lost as we descend in the series till at last among small individuals of the type and of the variety, of $\frac{3}{4}$ inch in length, we attain practical identity and it becomes impossible to differentiate the one from the other."

Specimens from the island do not belong to the extreme phase of the race but rather to a transitionary one. They are comparable to Hornell's fig. 21 on his plate v and fig. 29 on his plate vi, but as a rule are a little more nearly symmetrical bilaterally. A large valve is only 6·5 mm. thick in the middle of its disk. The following table of measurement shows in a genaral way the difference in size and proportions between these shells and a comparable series from the beds at the head of Rambha Bay noticed by the late Dr. W. T. Blanford.[1] I will discuss these differences further in comparing the deposits.

Measurements of Shells of Meretrix casta satparaënsis.—

	Barkuda						Rambha beds					
Height	25·7	30	31·5	33	34·5	38 5	33	39	40	41	43	44·5
Breadth	26·7	32	32	35·5	37·5	41	32·5	36·7	43·5	42·5	42·5	44·5

An unusually large shell, with the valves still adhering, picked out of the soil at the village of Samulia on the mainland between Rambha and Barkuda, is 57 mm. high, 57·5 mm. broad and 43·5 mm. in diameter with the two valves together. In this shell and in a large one from Rambha the thickness of the valve in the centre is slightly over 8 mm.

[1] *Mem. Geol. Surv. Ind.*, I, p. 275 (1869).

Most of the shells on Barkuda, where they occur in the red soil of the island, often in large numbers, are broken and have the surface corroded.

The typical form of *M. casta* still lives in the outer channel of the Chilka Lake, but all forms of the species have disappeared from the main area, in which the dense mud of the bottom is now quite unsuitable for the activities of a mollusc with so heavy a shell. The race *satparaënsis* is found in sandy deposits all round the lake as well as in the soil of Barkuda and other islands. This race, shells of which are also abundant (*f.* Hornell) in deposits of subfossil age at the edge of other backwaters and lagoons on the east coast of India, is apparently extinct, or at any rate has not yet been found in a living condition. In considering the age of Barkuda I will discuss the probable nature of its habitat.

Sunnetta scripta (Linn.).

A few, quite typical but colourless valves of this species were found amongst an accumulation of those of *Meretrix casta* near the middle of the island. The surface is somewhat worn.

S. scripta is one of the commonest bivalve molluscs on the sandy coast of Orissa and Ganjam, but it has not been found living in any part of the Chilka Lake.

Comparison between the Deposits of Shells on Barkuda and those at the head of Rambha Bay.

Blanford[1] in his "Sketch of the Geology of Orissa" says of the Chilka Lake:—

"The lake itself is a part of the sea first rendered shallow by deposits from the mouths of the Mahanaddi and from the silt carried up the bay round the hills near Ganjam by the violent southernly winds of the monsoon, and then entirely cut off by a spit, formed by the same agency of sand drifted along the coast. Near the south-western extremity of this spit there is a considerable deposit of estuarine shells, at a height of 20 to 30 feet above the present flood level of the Chilka. The shells found, *Cytherea casta* and *Arca granosa*, have not been observed living in the Chilka, and both are estuarine species, not occurring in the sea itself, but the former is now abundant in the estuary connecting the lake with the sea. This deposit appears to afford evidence of a recent elevation of the land."

As we have seen, his statement as to living molluscs must be modified in accordance with knowledge more recently acquired. Further it may be noted that the deposits of Arca and Meretrix at certain places extend right down to the shore of the lake and are even partially submerged in its waters in high floods. With the two species Blanford mentions are mingled occasional shells of *Cuma disjuncta* and *Potamides cingulatus*. Bleached shells also occur of freshwater species such as *Indoplanorbis exustus*, *Melanoides tuberculatus*, *Vivipara dissimilis* and *Pachylabra globosa carinata*. All these species are found living in the neighbouring rice-fields and village-ponds and it is

[1] *Rec. Geol. Surv. Ind.*, V, p. 61 (1869).

probable that the bleached shells are of more recent origin than those of the brackish-water forms found with them. As the country is liable to be flooded the beds have frequently been disturbed. The shells of all species occur in very fine grey sand.

If we compare these beds at the head of Rambha Bay with those on Barkuda, we notice very little difference so far as the composition of the fauna is concerned, except in the absence of probably adventitious freshwater forms in the latter. The only other species that is not common to the two localities is *Sunnetta scripta*, of which only a few valves were found on Barkuda.

The soil of Barkuda is too shallow to admit of any differentiation into distinct layers or strata, but a certain difference may be observed between the shells found in it and those from the sandy shores of the northern and western ends of the island. In the soil the most abundant species is *Meretrix casta*, while *Potamides cingulatus* is relatively and the Cuma and the Arca actually scarce. On the shore, on the other hand, the most abundant species is *Cuma disjuncta*, while the Meretrix is scarce and the Potamides has not been found at all. Furthermore, bivalve shells are seldom to be discovered on the exposed eastern end of the island, on which the Cuma is particularly common. These facts seem to point to a certain diversity of origin among the fossils of the island, but are probably correlated rather with differences in the habits of the molluscs than with differences of date. We know that *Cuma disjuncta* is essentially a rock-loving species, feeding on the small mussels (*Modiola striatula*) that adhere to rocks and stones, while all the other species frequent a soft bottom. *Meretrix casta* cannot live in soft mud but prefers clean sand, while *Arca granosa* is much less particular; *Potamides cingulatus* prefers very shallow water with a bottom composed of either sand or sandy mud. It is quite probable, to judge from the condition of the shells, that the deposits of Meretrix on the island do not occupy precisely the situations in which the mollusc originally lived, and all the shells from the shore of the island have the appearance of having been rolled about in the water; but the distribution of the species in a subfossil state corresponds on the whole with their habits in a living one.

The deposits at the head of Rambha Bay are so often disturbed by floods that it is difficult to derive from them any very precise information as to relative dates of origin. The only difference of phase between the shells they contain and those from Barkuda is to be found in the Meretrix, which is larger, thicker and more variable in shape in the beds on the mainland than it is in the island deposits. Moreover, the shells show a greater tendency to be ovoid in the former, owing to their posterior extremities being frequently more produced. In other words, the subfossil shells of the mainland are further removed from the *forma typica* of the species than those from Barkuda. As Hornell has shown (*op. cit.*, p. 167; 1917) conditions are now very favourable for the growth of the *forma typica* in the outer channel of the Chilka Lake. The beds near Rambha probably represent an old channel which ran southwards and eastwards into the Bay of Bengal at a time previous to the separation therefrom of the lake, but conditions in it must have

been different in several respects from those now prevalent in the outer channel. The variation in salinity of the water in particular was probably much less extreme and the sandy bottom must have consisted of finer particles. Lime must also have been abundant, as large quantities of *kankar* (nodular concretions of carbonate of lime) are dug from shallow pits at the edge of the lake, close to the place where the shells are found.

The small size of the shells of Meretrix from Barkuda shows that the molluscs cannot have been living in particularly favourable conditions, but as they are less far removed from the *forma typica*, which is the form that lives in conditions most nearly normal for a marine mollusc, they possibly represent an earlier stage in the evolution of the lake. Their dwarfed condition may be due to an admixture of alluvial mud with the sand in which they once lived, and this also may have had some effect in reducing the thickness of their shell, for heavy-shelled bivalve molluscs are not suited to live in dense sticky mud, such as that of the main area of the Chilka Lake.

The light thrown by palæontology on the history of Barkuda is not a strong one. It is, however, sufficiently bright to show that the island is of recent origin as such, and in considering its biology we are not concerned with the age of the ancient rocks of which it is composed. The existence of deposits of shells of a distinctly estuarine type, 30 or 40 feet above the present level of the lake, shows that its level has sunk considerably since the lake was an open bay, and Barkuda must have been completely submerged at the time at which the Rambha beds were laid down.

III. VEGETATION.

General Character of the Vegetation.

The flora of Barkuda, as might be expected from its scanty soil, infertile rocks and by no means excessive rainfall, is of a restricted kind. A rigid natural selection has taken place and many species, even genera and families, common on the mainland a few miles away, are absent or maintain a precarious existence as stray plants. The vegetation, however, is not a normal desert vegetation, for it consists mainly of large trees, shrubs and thick-stemmed creepers and is, at any rate in the rainy season, luxuriant in appearance. Neither is it a true equatorial jungle, many of the elements of which are entirely absent. There are no epiphytes (except "parasitic" figs), no tall grasses, reeds or bamboos, no palms, screw-pines, aroids or orchids, few true parasites, ferns, mosses or liverworts; and it is only where man has interfered that herbaceous plants (with very few exceptions) have been able to gain a footing. Moreover, the greater number of the creepers lose their leaves in the dry season.

Nevertheless, in spite of its restricted nature, the vegetation of the island can on analysis be divided into several distinct types occupying different areas. The greater part of the surface has been colonized primarily by a ficetum or fig-jungle in which the dominant tree is the wide-spreading Banyan, *Ficus bengalensis*. In this ficetum there is a fairly dense undergrowth, in which *Glycosmis pentaphylla* is the most

abundant shrub, while the branches of the trees are profusely festooned with the curious swollen and jointed stems of the vine, *Vitis quadrangularis*. This type of vegetation, for natural causes into which I will enter later, is rapidly being replaced by mixed thickets in which various vines and liañas are abundant and the Nim (*Azadirachta indica*) contends for the chief place among the trees with several species of Ficus that have not the spreading habit and adventitious roots of the Banyan. This occurs on parts of the island in which the rocky basis is covered by a thin layer of soil.

Part of the area we have to consider is, however, sandy and gravelly rather than rocky and soil of this kind is unsuitable for *Ficus bengalensis* and other fig-trees and also for *Glycosmis pentaphylla*. In inland spots where rocks are absent or deeply buried in sand there is, therefore, no ficetum and *Weihea ceylonica* replaces the Glycosmis as the dominant shrub, while the most abundant trees are the Nim and *Crataeva religiosa*, which here reaches a large size.

In the inland parts of the island these are the main types of vegetation, but the areas they occupy are almost completely surrounded by a marginal zone of trees of *Pongamia glabra*, which forms a ring round the island at high flood-level.

Two less important types of natural vegetation can further be distinguished, that of bare rocks and almost soil-less stony patches in the interior, and that of the littoral zone exposed between the ring of Pongamia-trees and the edge of the water when the autumn floods subside. The former type is, however, poorly developed and little differentiated, while the latter consists mainly of a few small herbs, sedges and grasses and of maritime trailers, such as *Ipomaea biloba*, which attempt to gain a footing at certain sandy spots on the shore every year, but never succeed in establishing themselves firmly.

Types of vegetation, due to the interference of man, now occupy certain parts of the island, though there is no actual cultivation. Of these, two can be recognized, viz. (*a*) thickets of the large leguminous herbs, *Crotalaria striata* and *Tephrosia purpurea*, growing on soil from which all other plants have been removed, and (*b*) the scanty growth of dwarf grasses, sedges and other plants which spring up on ground that has been levelled and practically deprived of soil as well as being cleared. Round the edges of a pond and of a well dug in the rock similar plants appear at first sight to constitute a third type, but the species are for the most part the same, only more vigorous and as a rule more erect.

Finally, it should be noted in this general account of the vegetation of the island that several exotic plants are feral and abundant and have conspicuously altered its facies. The chief of these are the Prickly Pear (*Opuntia* sp.), which seems to be replacing the indigenous giant Euphorbias, the Custard Apple (*Anona squamosa*), a very abundant large shrub or small tree, and *Jatropha gossypifolia*, one of the commonest of the larger herbaceous plants.

The various types of vegetation will be considered separately in greater detail, but a comparison of the flora and vegetation as a whole with those of the neighbouring islands and headlands may first be made.

Comparison between the Flora and Vegetation of Barkuda and those of other islands and headlands in the lake.

Very little detailed information is available about the flora of the shores and islands of the Chilka Lake and all I can do here is to give a few facts and impressions. The islands of the lake are of several kinds, differing greatly in formation and vegetation. Among them it is possible to distinguish at least five types, one of which exists more frequently as a headland or peninsula than as a complete island. These five types of island and peninsula may be considered separately. Between most of them and Barkuda no real comparison is possible, the contrast is so great.

In the outer channel of the lake-system the islands are mere sandbanks often submerged, completely or in part, in the flood season. Their vegetation is composed of a few species of low sedges and grasses, which sometimes form a coarse turf, and occasionally of small thickets of dwarfed *Crataeva religiosa* only a few feet high.

The largest island in the main area, Nalbano by name, is a flat mud-bank entirely covered by a phragmitetum of *Phragmites Karka*, the roots of which are submerged in the flood-season. In the dry weather a few small herbaceous plants spring up as the mud is exposed with the retreat of the waters, but the flora is a scanty one.

The third type of island, also in this area, is low or undulating, though always higher than Nalbano, and consists mainly of alluvium. It always lies close to the shore and frequently becomes a peninsula as the waters of the channel that separate it from the mainland dry up. The vegetation is that of a meadow with clumps of large trees, mostly figs of various species and tamarinds. The flora is much richer than that of Barkuda, especially in herbaceous plants, and many herbs, bushes and herbaceous creepers abound that do not occur on that island, or are represented there only by occasional plants. Among the more conspicuous of such species I may mention the following :—*Helictres isora*, *Martynia diandra*, *Barleria prionitis*, *Mucuna pruriens*, *Cipadessa fruticosa*.

A characteristic feature of the scenery of the Chilka Lake is the presence of small conical hills that appear to be much higher than they are on account of their regularity of shape and of the way in which they stand out from their surroundings. Several of these hills jut out into the lake and form conspicuous landmarks, while others, all of a smaller size, are completely surrounded by its waters. They have the appearance of being composed of irregular masses of large stones piled up one upon another. According to Blanford they are formed of gneiss and their peculiar structure is due to the weathering away of the softer parts of the original rock and the persistence of harder blocks. The most conspicuous of these headlands at the south-western end of the lake is named Ganta Sila. It lies only about four miles south-west from Barkuda and might be expected a priori to have a rather close affinity in vegetation. I made collections of plants upon it on several occasions and though my time was too limited to permit of attention to

any but the more conspicuous species, an interesting comparison is possible. Two points struck me particularly on my visits in the rainy season, viz. (1) the superior brightness, size and conspicuousness of the flowers as compared with those of the island, and (2) the much larger number of species of Graminaceae and of herbaceous plants, including creepers.

Among plants with showy flowers on Ganta Sila the commonest is the beautiful *Bauhinia tomentosa* with pale yellow flowers bearing a conspicuous claret-coloured spot on one of the petals. The shrub forms irregular thickets among the blocks of rock on the steeper slopes. Neither it nor any of its genus is found on Barkuda. Other plants with bright-coloured flowers collected in the space of five minutes on the hill in September, 1919, were *Cassia occidentalis, Pavonia odorata, Helictres isora, Argyraea speciosa* and *Ipomaea sepiaria*. The only one of these seen on Barkuda was the Ipomaea, of which a stray plant occasionally establishes itself on the island.

Numerous species of grasses were observed on Ganta Sila on this and other occasions, but more important in the vegetation than any of them are the bamboo, *Bambusa arundinaceae*, and the reed, *Phragmites karka*. The latter forms a ring round the base of the hill at the edge of the lake, while the former grows with great luxuriance in thickets on the gentler slopes.

The main difference between the creepers on Ganta Sila, where plants with this habit are extremely abundant in the thickets of Bauhinia and Bambusa, and those on Barkuda, is that the majority on the hill are herbaceous, belonging mostly to the Convolvulaceae and the Cucurbitaceae, while those on the islands are mainly liañas with very stout woody stems of great length, the genus dominant among them being Vitis, to use the generic name in a broad sense. On those parts of the hill where more soil is present, many of the shrubs are identical with those on Barkuda, one of the commonest being *Weihea ceylonica*. The large bushy Euphorbia abundant at these spots is, however, different from either of the two large species of the genus on the island. It is probably, as Colonel Gage informs me, *E. tortilis*, but the flowers have not yet been examined.

The fifth type of island in the Chilka Lake is that of Barkuda itself and its sister-island Cherriakuda. The two are very similar in formation and vegetation.

Among the genera (indigenous and feral), of which at least one species is common in the district in which Barkuda is situated but none are found on the island are, therefore, the following:—Phragmites, Bambusa, Bauhinia, Cassia, Mucuna, Cipadessa, Pavonia, Helictres, Argyraea, Martynia, Barleria, Pandanus. Those represented on the island merely by stray plants are Cereus, Barringtonia, Mimusops, Calatropis, Ipomaea, Solanum, Evolvulus, Clerodendron. The genus represented by the most species on Barkuda is Ficus, with seven species, all capable of growing into large trees. Euphorbia comes next with four species, two of which are tree-like, while two are small and spreading. The subgenera assigned by Dr. Carter to Vitis (Cissus and Cayratia of some authors) have three species between them, all large creepers, and so have *Capparis*, with two creepers and an upright

shrub, and Oldenlandia, the representatives of which are among the few herbs that seem to belong to the true indigenous flora.

Flowering and Leafing Seasons.

The flowering and leafing seasons of the main constituents of the vegetation of the island are not only of interest in themselves but have a special importance from an entomological point of view. The plants of Barkuda fall into three groups so far as flowering is concerned, viz. (1) those that flower in spring, (2) those that flower in the rainy season, *i.e.* between the middle of June and the middle of October, and (3) those that have no definite flowering season. The division is not absolute, for some plants which flower mainly in spring (*e.g.* the common shrubs *Glycosmis pentaphylla* and *Weihea ceylonica*) also flower less profusely or occasionally at other seasons, while many of those that belong to the rainy season group begin to flower a little before the rains commence. Among those that do so are the Nim, *Barringtonia acutangula* and the vines *Vitis quadrangularis* and *V. vitiginosa*.

The spring flowering season is for the most part of very short duration. At the beginning of April (perhaps a little earlier in some years) there is a sudden burst of blossom all over the island, the most conspicuous species being the Glycosmis and the Weihea among the shrubs, and among the creepers *Dalbergia monosperma* and *Symphorema involucratum*. With the exception of the last, the general colour of the flowers of which is dull mauve, all these plants are almost hidden in white blossom for a few weeks, or even but a few days.

Craeteva religiosa, with pale yellow and mauve flowers, and *Ochna squarrosa*, with gorgeous deep yellow flowers, are also in blossom at the same time, but their season is more protracted.

Except the figs, which belong to the third group, most of the larger trees and creepers belong to that of the rainy season, for example the Nim, the Barringtonia and *Mimusops hexandra* among the trees and among the creepers the true vines, *Aganosma caryophyllata* and *Acacia intzia*. None of these, except the Barringtonia with deep pink and the Aganosma with pure white blossoms, have flowers that are conspicuous in themselves. Most of the herbs of the island, springing up as they do in the rainy season, naturally flower at this season.

Among the species that flower at all seasons or at any season several of the herbs of cleared ground must be included, and also *Datura fastuosa* and the various fig-trees.

Two leafing seasons can be distinguished on Barkuda, one immediately preceding the spring flowering season, the other at or shortly after the beginning of the rainy season. In March most of the trees and shrubs put forth new leaves, but if the weather is dry in April and May most of these new leaves wilt and die, and about the end of June, when the heavy rains are well established, new leaves are produced for a second time. At this period also the large deciduous creepers come into full leaf and thus completely change the aspect of the vegetation. The tree Euphorbia

(*E. neriifolia*) also puts forth its large and handsome leaves in June, and the various cryptogamic plants revive, while the more conspicuous herbs spring up afresh.

Types of Vegetation on the Island.

We may now consider the types of vegetation to be noticed on the island further. It will be convenient to discuss them in geographical order, commencing our survey with the foreshore and proceeding inland. I will, however, leave those types that are due to the interference of man until the last, discussing what we may call the natural types first.

Vegetation of the Foreshore.

As the flood-level of the lake begins to sink in autumn with the cessation of the monsoon rains a wide stretch of foreshore is gradually exposed. Its character differs at different spots, but it is everywhere either rocky, gravelly or sandy and nowhere muddy. The greater part of the sheltered northern shore is sandy, while the southern shore is rocky with sandy patches. The eastern shore, the most exposed, is mainly composed of gravel or very coarse sand, while the western shore is rocky.

The vegetation of the foreshore is very scanty. Indeed, on its rocky parts there is at most spots, practically speaking, no vegetation at all except that of filamentous algae, with *Potamogeton pectinatus* in softer depressions; and these plants of course die down completely as the rocks become desiccated. Just below the highest flood-level, however, one or two trees have managed to establish themselves among the rocks. Their roots are washed by the waters of the lake for a short period in years of high flood-level only. Of such trees the only one at all common is *Salvadora persica*, which on Barkuda is only found in such situations.[1] It grows to a fair size but always has its trunk distorted and of abnormal form owing to the young shoots being eaten by deer. A beautifully regular tree of *Barringtonia acutangula*, the only one on the island, grows in a small patch of rocks on the south shore, while on the same side two handsome specimens of *Mimusops hexandra* occupy a similar position. Apart from lichens on the stones, the other plants at all characteristic of the upper flood-level below the zone of Pongamia to which I shall have to refer later, are two species of Phyllanthus, one of which (*P.* ? *debilis*), has, though small, a bushy habit and an extremely tough woody stem and tap-root. I may mention here the dwarfed dome-shaped plants of *Canthium parviflorum* (Plate X) that grow among rocks near the shore, as their peculiar form is due partly to the leaves and young twigs being killed off by salt spray, and partly to the attacks of deer. These plants, however, as a rule grow well above high flood-level.

The vegetation of the sandy and gravelly foreshore is much less conspicuous, if more composite, than that of marginal rocks. It consists in the earlier part of the year of a few small sedges and grasses, of a single abundant herbaceous plant (*Cressa cretica*) of wide geographical distribution, and of occasional species that attempt without success to establish themselves annually. Among these is *Ipomaea biloba*, one of the most characteristic forms in the vegetation of sand-dunes on the Indian

[1] Except for a few dwarfed specimens growing in the side of a well.

coasts. Single plants of this species spring up every autumn in the sandy patches on the southern side of the island from seeds left by the floods, but perish long before the returning floods, without reproducing themselves or even flowering.

Later on, by the beginning of April, other plants establish themselves on the sandy foreshore, but not all by the same means. The nodular roots of a small sedge remain alive at the bottom of the lake near, but a little above, the low-water level. These sprout and form a coarse turf as they are exposed by the complete retreat of the floods, but I have never found the species in flower. Doubtless the seeds of certain halophytic plants remain dormant beneath the water in crevices in the rocks and under stones, for both *Cressa cretica* and *Suaeda nudiflora* spring up, at first appearing as very small plants, a little above low-water level, the latter species later in the year than the former.

Other plants are introduced anew each year by flood-carried seeds or rooting stems. One of the commonest of these, though it is represented merely by scattered plants on the lower parts of the foreshore, is the common *dhub*-grass (*Cynodon dactylon*), stocks of which are brought as such and flourish among the rotting algae, without, however, flowering. Fragments of Phragmites are also cast ashore in the flood season and attempt to grow, but never with final success.

Yet other plants, which appear on the sandy foreshore latest of all, are introduced by aerial agencies. Few of these are immigrants from other parts of the island, the most conspicuous that may so be classed being *Datura fastuosa* and the little sedge, *Cyperus compressus*, the latter conspicuous on account of its bright green colour and abundance. The Datura flourishes in this situation in the hot weather but attains its maximum development and full flowering shortly before the return of the floods, in which it disappears. The most conspicuous, however, of all the members of this seasonal association is *Coldenia procumbens*, which has not been found in any other zone on Barkuda. It forms in March and April large circular mats, which are often contiguous, and thus covers considerable areas. By the end of June the majority of these are black and dead, probably owing to the heat of the sand, for plants in the shade of Datura bushes survive longer. Other herbs found on the foreshore in the dry season attain no more than a precarious existence as scattered individuals. On Barkuda I have never seen the rush-like *Scirpus littoralis*, which forms a large scirpetum on the more sheltered part of the foreshore of Cherriakuda, where soft mud occurs.

The Pongamia Zone.

The ring of *Pongamia glabra* that surrounds the island at high-flood level is almost unbroken on the northern shore, where it is three or four trees deep and is only interrupted by occasional trees of Azadirachta and Crataeva. The individuals of these two species are wedged in singly among those of the Pongamia and it is a striking fact that in this position they are as a rule almost overwhelmed by dense masses of creepers, the commonest of which are the Leguminosae, *Derris scandens* and *Acacia intzia*. *Capparis Roxburghii* is also found in this zone on Nim trees, which are sometimes parasitized by *Cassytha filiformis*. Neither creeper nor parasite was found

commonly in any other part of the island. The Pongamia trees in this association provide a remarkable contrast to those of the Nim and Crataeva in that they are almost always entirely free from creepers, only an occasional spray of Derris stretching out over them from an adjacent tree of one of the other species. This appears to be due partly to their spreading habit and dense foliage, which prevents other plants from springing up in their shade. It cannot, however, be the only explanation, as the woody stems of both of the common Leguminous creepers often extend along the sand for great distances before they grow upright. I once traced a stem of the kind on the surface for 75 paces on the sand outside the Pongamia trees. It ran parallel to them and then mounted on a Nim.

On the more exposed eastern shore of the island the ring of Pongamia is more frequently broken by intrusions of Crataeva and Nim, while in the more stony parts of the margin of the lake trees of *Salvadora persica* are not uncommonly found in the same situation. Where the rock is quite solid *Pongamia glabra* cannot establish itself.

In years of high flood-level the roots and lower branches of the trees are often completely submerged for several months in brackish water. In these circumstances the submerged branches die, but the rest of the tree apparently does not suffer. As the floods retire they leave the dead branches festooned with plants of *Potamogeton pectinatus* and filamentous algae.

There is an almost complete absence of herbaceous or bushy undergrowth in the denser parts of this zone, but at a few spots little thickets of *Datura fastuosa* establish themselves on its outer edge in the dry season. As the floods rise and the plants are sprayed with brackish water, their young shoots undergo a peculiar modification and become densely covered with very small, deeply incised leaves. At other places a line of Jatropha grows up in a similar situation. Its leaves are always small and distorted, without being densely packed together as in the Datura; but this dwarfing and distortion of the leaves of Jatropha is a common phenomenon all over the island, and also in many parts of Southern India in which no brackish water is present.

Vegetation of sandy areas within the Pongamia Zone.

Towards the eastern end of the island and near the northern shore, inside the Pongamia zone, a distinct association of shrubs and trees occupies a considerable area of sandy and gravelly soil. Indeed, this association can be traced all along the north side, but it merges gradually into the one that I will describe after it, the most conspicuous feature being the gradual substitution of *Weihea ceylonica* for *Glycosmis pentaphylla* in the sandy ground, and the entire absence therefrom of trees of the genus Ficus. In the area now to be considered the vegetation is not so dense as in some other parts of the island and consists mainly of small, more or less isolated clumps of bushes (*W. ceylonica*) and large trees. *Crataeva religiosa* here reaches a larger size than in the Pongamia zone and shares with the Nim the preponderance among the trees. *Odina Wodier* is also common and a few trees of *Albizzia odoratissima*

occur in the intermediate territory between that of Glycosmis and that of Weihea. There are comparatively few clumps of Prickly Pear in the sandy area, but trees of the indigenous *Euphorbia neriifolia* are not uncommon and perhaps reach a larger size than in any other area.

Generally speaking, creepers are less abundant and less luxuriant than either in the Pongamia zone or in the other main area of the interior. This is particularly true of the large liañas, for herbaceous species such as those of the genera Dioscorea and Cissampelos are not uncommon on the bushes.

Except for masses of Jatropha, herbaceous plants are represented in this area mainly by *Oldenlandia Heynii*, which forms a regular border to the clumps of Weihea in the rainy season. This plant, however, has almost completely dried up by

TEXT-FIG. 3.—Thickets of *Weihea ceylonica* on sandy ground. Dead plants of *Oldenlandia Heynii* in the foreground; a large tree of *Crataeva religiosa* in the background.

December and the soil is bare except for its dead stems. At a few spots where the bushes are absent, perhaps owing to sand-pits having been dug or to their roots having been destroyed by visitors in search of the tubers of Dioscorea, there are small thickets of Tephrosia and Crotalaria.

THE ORIGINAL FICETUM AND ITS SUBSTITUTED THICKETS.

We now come to what I regard as the most important feature in the vegetation of the island. In my account of the general character of this vegetation I have therefore given it greater prominence than any other.

The largest and apparently the oldest trees in the island are a few fine specimens of the Banyan (*Ficus bengalensis*). But even in my own experience of seven years some of the finest of these have almost completely disappeared, while others have under-

gone a rapid but partial decay. A careful search through those parts of the island in which the rock is covered by a thin layer of soil reveals the fact that remains of the same tree are scattered all over them, and from what we know of the method of growth of the Banyan it is not extravagant to suppose that it was one of the earliest plants to find a foothold on the trunks of trees that have now entirely disappeared, or even in crevices in the rocks, probably soon after the island became dry land. Individuals of the species often spread over an area greater perhaps than that covered by any other tree, owing to its power of sending down from horizontal branches adventitious roots which penetrate into the soil, thicken and grow into supplementary trunks. The tree, therefore, takes the form when fully developed of a vast colonade. It is very common for some of the trunks to die with their parent branches, which decay, leaving other trunks and branches of the same organism still intact and flourishing. The process can be observed as a common phenomenon on Barkuda. Frequently the dead trunks form a basis for the growth of other trees of the same genus, as a rule a peculiar variety of *F. gibbosa* with highly polished, dark-green leaves and the branches, at any rate in the younger stages of growth, pointing almost directly upwards. This tree (which according to Dr. Carter and Mr. Narayanaswami is distinct from Koenig's var. *parasitica*) has never the spreading habit of the Banyan. A single long branch of the latter tree, with its supporting columns, is sometimes replaced by a straight row of fig-trees of the other species set at fairly regular distances apart and so completely separated that these spaces are considerably greater than their own periphery.

Thus one kind of ficetum replaces another and the ground between its individual plants has been prepared by the decay of the branches and leaves of the Banyan for the growth of other trees belonging both to the same and other genera. One of the most abundant of these is *Ficus infectoria*: *F. retusa* has a similar habit to the Banyan and is not very common; it does not appear to be able to establish itself in quite such rocky soil as that species. Commoner than any fig, however, in this association is the Nim, certainly the most abundant tree of any single species on the island. Other common trees are *Alphonsea sclerocarpa*, *Strychnos nux-vomica*, *Morinda tinctoria*, *Walsura ternata* and *Ochna squarrosa*, which, however, is smaller than the others. Round the margin of the thickets feral Custard-Apples (*Anona squamosa*) are now establishing themselves in large numbers and often attain the dimensions of small trees. In less congested spots the Prickly Pear Opuntia[1] forms large and formidable clumps and seems to be ousting the indigenous *Euphorbia neriifolia*.

Even under the densest shade of the Banyan *Glycosmis pentaphylla* can flourish as a small shrub. When these trees decay it grows larger and more luxuriant and may, indeed, sometimes be called a small tree. It is by far the most abundant

[1] In wet weather the higher plants of this species become top-heavy and, as the soil round their roots grows damp and soft with the rain, frequently fall over. From their terminal branches, as they lie prone on the ground, new shoots spring upwards. The basal part of the plant, which apparently has less vitality, usually rots away, so that the whole organism actually progresses forwards slowly from year to year almost in the manner of a leech.

shrub in the thickets. After it in order of numbers come *Canthium parviflorum*, *Capparis brevispina* and *Randia malabarica*. With these grow numerous other plants which it is hard to call definitely either shrubs or creepers, as they appear to depend for support on firmer plants more at some spots than at others. Such are *Zizyphus oenoplia* and some of the numerous forms of *Premna latifolia*.

True creepers form an important element in the vegetation of the thickets. They are of three kinds, woody, succulent and herbaceous.

The woody creepers or liañas are almost as large and as abundant as in a tropical rain-forest, at any rate in those parts in which the original Banyans have disappeared; but they are deciduous. On the Banyans that remain, and indeed also on the fig-trees of other kinds, these creepers find it difficult to spread themselves. Apparently most of the species that are found on the island must commence their growth in fairly open places and cannot start to grow upright in dense shade. It is only, therefore, when they can first trail over bushes or smaller trees that they can reach the tops of the figs and there luxuriate. In this way, by growing first over a small thicket of Glycosmis, *Aganosma caryophyllata* occasionally almost overwhelms a large fig. This is one of the largest and certainly the most conspicuous liaña on the island, but it is not very common. Its masses of white sweet-smelling blossoms last from July to September or October and in these months it is a most beautiful object. Far commoner is the vine *Vitis vitiginea*, which also flowers in the rainy season. Its blossoms are much less conspicuous in themselves but are rendered almost as noteworthy by the flocks of butterflies (especially *Papilio polytes*) always hovering over them. In the older parts of the thickets this vine is perhaps the commonest species of liaña, but towards the edge of the island *Gymnema ceylonica*, *Combretum extensum* and *Dalbergia monosperma*, are more abundant. *Derris scandens* and *Acacia intzia* are more characteristic of the Pongamia zone, but the latter creeper penetrates into the central thickets towards the east end of the island.

A characteristic feature of the liañas is that several different species often grow together, with their branches intertwined, and yet each remains in a flourishing condition. The masses of their foliage often appear to overwhelm the trees that support them (especially Nim trees) without killing their hosts.

The only two completely succulent creepers in the flora of Barkuda are *Vitis quadrangularis* and *Sarcostemma brevistigma*. The former is the most generally distributed creeper on the island in all types of vegetation that include shrubs or trees. Its curious jointed stems hang in festoons on a very large proportion of the trees of all species. It has this advantage that it can spring up and grow without inconvenience in the densest shade. The fleshy leafless stems of the Sarcostemma, which is much less abundant, as a rule trail over Prickly Pears in fairly open spots.

I have already noticed that herbaceous creepers play a much less important part in the vegetation of Barkuda than they do in that of high rocky headlands in the vicinity. It is interesting to note that several species common on the headlands (*e.g. Ipomaea sepiaria*) occasionally establish a single plant on the island, without ever becoming in any way common. Other creepers, common on richer soil on the

mainland, have a similar status, for example *Abrus precatorius*, and *Solanum trilobatum*. *Dioscorea sativa* and *D. oppositifolia*, on the other hand, must be regarded as part of the successful indigenous flora. The former grows to a great length and succeeds in climbing on fairly tall trees, while the latter is not infrequently found on Prickly Pears and on Glycosmis.

There is hardly any herbaceous vegetation other than a few creepers in most parts of the thickets, but open spaces in them are usually edged in the wet season with a border of *Oldenlandia Heynii*, while in the shade of the Banyans small scattered plants of *O. nudicaulis* and *Vandellia hirsuta* spring up at this season. On the roots of fig trees and on small piles of stones in the damper spots there is also a small Cryptogamous association, consisting of at least one species of moss, the liverwort *Riccia crispatula*, *Selaginella tenera* (not always present) and the fern *Adiantum caudatum*. *Hemionites aerifolia* is also to be found not infrequently in this association, but often grows alone in the soil of the thickets.

Vegetation of rocks and stony areas.

In the midst of the thickets there are many stony areas, fifty to a hundred yards in circumference or perhaps sometimes a little more. In these the larger xerophytes, such as the tree-Euphorbias and the Prickly Pear, are too heavy to maintain a foothold owing to the lack of soil. The vegetation is extremely scanty. Small plants of the sedge *Bulbostylis barbata* sometimes form a sparse covering, but the only characteristic plant, which is not found elsewhere on the island, is *Caralluma adscendens*, little bushy clumps of which often form, with their upright leafless stems, conspicuous objects in the central, most exposed parts of such areas.

The true rock-flora of the interior of the island is in one respect more distinctive, viz. in the dense masses of tall shrubs of *Euphorbia antiquorum* that it includes. These, however, occur only at one or two sheltered places, where the rock is sufficiently broken for their roots to penetrate far enough to give them stability. The fern *Cheilanthes tenuifolia* is found growing in their shade, as is *Phyllanthus ? debilis*. *Portulaca quadrifida* grows occasionally on these rocks but is commoner among stones in more exposed places.

Vegetation of cleared areas.

Two bungalows have been built on Barkuda. Round these and their offices a considerable area has been cleared of all jungle except a few large fig-trees of different species, and the ground has been levelled in such a way that the soil has been almost completely removed in the process, or else subsequently washed away by rain. In this area the vegetation consists almost exclusively of plants growing prone or forming small clumps not more than two or three inches high. The commonest species are grasses and sedges, the most abundant being *Panicum trypheron* and *Elusine aegyptiaca* among the former and *Bulbostylis barbata* among the latter. All these form sparse rosettes which lie flat on the ground. Numerous other small herbs are also included in this vegetation, all or nearly all being common weeds

widely distributed in India. Among the most abundant are *Aerua lanata, Boerhavia diffusa, Mollugo stricta, Euphorbia thymifolia, Ionidium suffruticosum, Vernonia cinerea* and *Oldenlandia Heynii*. The last, however, is not so abundant as at the edge of the thickets.

There are two wells on the island, dug in the rock, and also, as already stated, a small pond constructed in the same manner. At first sight the vegetation immediately surrounding these, where the rock is damp, looks very different from that of the cleared and levelled area, but on examination most of the plants are found to belong to the same species but to be much more luxuriant and to grow erect. *Vernonia cinerea*, for example, is rarely more than three inches high on the bare ground, while at the edge of a well surrounded by territory of the kind it grows to a height of at least two feet. This is also so with *Aerua lanata*, and in less degree with most of the herbs I have mentioned. The sedge *Bulbostylis barbata* gradually assumes the form *pulchella* as the rock on which it grows becomes damper, and in all the species transitionary forms can be found between the extreme depauperated and fairly normal phases.

A curious feature of the vegetation of dry cleared areas is that while the majority of its species flourish, as might be expected, in wet weather, a few (*e.g. Evolvulus alsinoides* and *Indigofera linifolia*) appear in the dry season.

On the rocks immediately round the pond a few plants are found that do not occur elsewhere on the island. The most conspicuous of these is the sedge *Mariscus albescens*, the roots of which are submerged in the rainy season. Its flowering stems grow at least three feet high. This is the only Phanerogamous plant in any sense aquatic found in the pond.

Behind the bungalows and sheltered by them and by a circle of large fig-trees (*F. bengalensis, F. infectoria*, and *F. retusa*), a small field was prepared for agriculture some years ago by the removal of all indigenous plants and probably also of most of the stones. The site was chosen as that in which the soil was most likely to be fertile, but owing to some difficulty about land revenue nothing was ever planted. A high, dense herbaceous thicket consisting mainly of *Tephrosia purpurea* and *Crotalaria striata*, with scattered clumps of Datura, has sprung up on this area. In the wet season the Tephrosia is the dominant species, but in the cold weather it begins to die down and the Crotalaria assumes the predominance. Both die down almost completely in the hot weather.

This type of vegetation is also found on neglected footpaths in those parts of the island from which fig-trees have recently disappeared. It can only flourish at spots which are unshaded through the day. Where the soil is shaded by trees it disappears abruptly and its place is taken by thickets of Glycosmis and Anona. This is shown very clearly in the lower photograph reproduced on plate XI. The photograph had to be taken at early dawn in order to secure sufficient light under the large trees of *Ficus infectoria* seen on the right of the picture.

A further point that may be noted as to the interference by man with the natural vegetation of the island is that a small herd of spotted deer (*Cervus*

axis) has been introduced. Their effect on the vegetation has not, however, been very great except perhaps in preventing the introduction of new species, as there are few plants in it suitable for their food. They leave the Glycosmis, the Tephrosia, the Crotalaria and most of the other shrubs and larger herbs untouched, and feed mainly on the leaves of *Canthium parviflorum* and *Capparis brevispina* and on the scanty herbage of cleared and levelled ground. This has the effect of dwarfing the latter still further. The deer have also eaten away the leaves and twigs of fig-trees accessible to them, thus giving the trees a somewhat peculiar appearance, as though all their lower branches had been pruned. This is particularly noteworthy in the trees immediately round the bungalow, the trunks of which are protected by brick-work.

In the foregoing pages I have attempted to write a summary analysis of the main factors other than zoological that have influenced and are influencing the fauna of the island of Barkuda. Various specialists have been kind enough to promise me reports on different groups of animals. To them, as well as to the botanists and geologists mentioned in my prefatory note, my hearty thanks are due.

Let me in conclusion reiterate my firm conviction that to study the fauna of any area as a whole, and gain a clear conception of its peculiarities and their causation, it is necessary first to study the physiography, paleontology and vegetation of that area. It is highly desirable, moreover, that the observer sho d have the knowledge of the principles of zoological taxonomy only to be gained by practical experience. The generous co-operation with which those I have mentioned have assisted me has alone made my work on Barkuda possible, but may not the mere fact that it has been possible, and indeed not very difficult, to carry out a preliminary investigation of the kind embodied in this memoir, perhaps indicate that pure museum taxonomy plays too important a part in our present ideals of faunistic work? Taxonomy is necessary and valuable, but can any faunistic investigation be considered complete, or even placed on a firm basis, when the work of the taxonomist is accomplished without reference to environment?

SYSTEMATIC LIST OF THE PLANTS OF BARKUDA.

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ABBREVIATIONS.

Bak. Fern. All.—Baker's Fern Allies.
Bedd. F.B.I.C.—Beddome's Handbook of Ferns in British India and Ceylon.
Eng. and Prantl Pflanz.—Pflanzenfamilien by Engler and Prantl.
F.B.I.—Flora of British India by Sir Joseph Hooker.
Prain. Beng. Pl.—Bengal Plants by Sir David Prain.
Roxb. Fl. Ind.—Flora Indica by Dr. W. Roxburgh.
Syn. Fil.—Synopsis Filicum by Hooker and Baker.

CLASSIFIED LIST.

EMBRYOPHYTA ASIPHONOGAMA.

BRYOPHYTA.

I. RICCIACEAE.

1. **Riccia** LINN.

1. **R. crispatula** Mitt.[1]

Loc.—Barkuda. No. 1304.

"Common on stones in damp, shady places, also found on walls, etc. In more exposed situations becoming hard and black when the air is dry and immediately green again as soon rain falls."

Distrib.—Hitherto known from Ceylon.

PTERIDOPHYTA.

II. FILICALES.

2. **Hemionites** LINN.

2. **H. arifolia** Burm. Bedd. F.B.I.C. 413.

H. cordata Roxb. Hk. and B. Syn. Fil. 398.

Loc.—Barkuda. No. 1201.

"Grows in the shade of bushes on stony ground in the interior of the island. Not uncommon in the rainy season."

[1] Identified by Professor S. R. Kashyap.

Distrib.—Common in South India both in plains and on hills, Ceylon, East Bengal, Burma and the Philippines.

3. **Adiantum** Linn.

3. **A. caudatum** Linn. Hk. and B. Syn. Fil. 115; Bedd. F.B.I.C. 83.

Loc.—Barkuda. No. 1274.

"A fern on rocks at the edge of the pond, also found with preceding species in thickets. Most plants die down in dry season but a few green fronds can be found as late as the end of April."

Distrib.—Throughout India, Ceylon and Malay Islands, Mauritius and Cape Verde Islands.

4. **Cheilanthes** Swartz.

4. **C. tenuifolia** Swartz. Hk. and B. Syn. Fil. 138; Bedd. F.B.I.C. 92.

Loc.—Barkuda. No. 1306.

"Found on the wall at the edge of the pond, but scarce on the island. It grows also on rocks at the base of *Euphorbia antiquorum*."

Distrib.—Subtropical Himalayas from Sikkim to Assam and Chittagong, Madras Ceylon, and the Pacific region.

LYCOPODIALES.

III. SELAGINELLACEAE.

5. **Selaginella** Spring.

5. **S. tenera** Spring. Mon. ii, 241; Bak. Fern Allies 118.

Loc.—Barkuda. No. 1321.

"On soil among stones in thick jungle; only in the rainy season."

Distrib.—Hills in South India and Ceylon.

EMBRYOPHYTA SIPHONOGAMA.

ANGIOSPERMEAE.

MONOCOTYLEDONEAE.

IV. POTAMOGETONACEAE.

6. **Potamogeton** Linn.

6. **P. pectinatus** Linn. F.B.I. vi, 567; Prain, Beng. Pl. ii, 1123.

Loc.—Barkuda. No. 1387.

"In the lake close to the shore of the island." See Annandale Proc. As. Soc. Bengal.

Distrib.—Throughout India and Ceylon. Found in most regions.

V. GRAMINACEAE.

7. **Panicum** Linn.

7. **P. trypheron** Schult. Var? F.B.I. vii, 47; Prain, Beng. Pl. ii, 1179.

P. tenellum Roxb. Fl. Ind. i, 306.

Loc.—Barkuda. No. 1236.

"On bare stony ground, chiefly in the rainy season."

Distrib.—Throughout India. Also in China, Borneo and Tropical Africa.

8. Eleusine Gaertn.

8. **E. aegyptiaca** Desf. F.B.I. vii, 295; Prain, Beng. Pl. ii, 1230; Roxb. Fl. Ind. i, 344.

Loc.—Barkuda. No. 1326.

"Grows profusely in the rainy season on loose stony soil."

Distrib.—Throughout India and Burma. Found in the warm regions of the old world and introduced into the new.

9. Cynodon Pers.

9. **C. dactylon** Pers. F.B.I. vii, 288; Prain, Beng. Pl. ii, 1227.

Panicum dactylon Linn. Roxb. Fl. Ind. i, 289.

Loc.—Barkuda. No. 1508.

"On sandy beach, where it springs up in March and April and persists without flowering till overwhelmed by the monsoon floods. It is most abundant among masses of dead felted algae."

Distrib.—Throughout all warm countries.

10. Eragrostis Beauv.

10. **E. tenella** Roem. and Sch. var. **plumosa** Stapf. F.B.I. vii, 315; Prain, Beng. Pl. ii, 1221.

Poa plumosa Roxb. Fl. Ind. i, 337.

Loc.—Barkuda. Nos. 1204 and 1324.

"No. 1204 was growing at the edge of a well and is more luxuriant than No. 1324, which was growing sparsely on bare stony ground. Both were collected in the rainy season."

Distrib.—Throughout India, Burma and Ceylon.

11. **E. tenella** Roem and Sch. var. **breviculmis** Stapf. F.B.I. vii, 316; Prain, Beng. Pl. ii, 1222.

Loc.—Barkuda. No. 1391.

"A single plant found growing on footpath in December."

Distrib.—Upper India from the Punjab to Behar, and C. India extending to the Circars.

12. **E. interrupta** Beauv. F.B.I. vii, 316; Prain, Beng. Pl. ii, 1222.

Poa interrupta Koen. M.S. Roxb. Fl. Ind. i, 335.

Loc.—Barkuda. No. 1386.

"A single plant growing on a footpath in December."

Distrib.—Throughout India, Burma and Ceylon. Also in Mesopotamia and Tropical Africa.

VI. CYPERACEAE.

11. Lipocarpha Br.

13. **L. argentea** R. Br. F.B.I. vi, 667; Prain, Beng. Pl. ii, 1157.

Loc.—Barkuda. No. 1285.

" Rare, at the side of a footpath."

Distrib.— India and Ceylon. Throughout the tropical and sub-tropical parts of the old world.

12. **Cyperus** Linn.

14. **C. cuspidatus** H. B. and K. forma **angustifolia** Buch.-Ham. F.B.I. vi 598 ; Prain, Beng. Pl. ii, 1141.

Loc.—Barkuda. Nos. 1276 and 1309.

"No. 1276, growing among rocks at the edge of the pond, is much larger than No. 1309 growing in the shade of herbage at the edge of a path."

Distrib.—Throughout India and in all warm regions.

15. **C. compressus** Linn. F.B.I. vi, 605 ; Prain, Beng. Pl. ii, 143 ; Roxb. Fl. Ind. i, 194.

Loc.—Barkuda. Nos. 1206 and 1389.

" Both Nos. growing on sand of the shore near upper flood-level."

Distrib.—Throughout India as also in all warm countries except Australia.

13. **Mariscus** Vahl.

(*Included as a section of Cyperus in Eng. and Prantl Pflanz.* II. 2.)

16. **Mariscus** sp. nov., aff. (*M. Dregeanus* Kunth.). Differing from *M. Dregeanus* Kunth. in having nuts in all the spikelets, which are dorsally compressed and longer than those of *M. Dregeanus.* The flowering glums are boat-shaped and not ovate.

Loc.—Barkuda. No. 1213.

" Rare."

17. **M. albescens** Gaud F.B.I. vi, 623 ; Prain, Beng. Pl. ii, 1147.

Loc.—Barkuda. No. 1214.

" Between rocks in water near the edge of the pond ; plants 3 ft. high. Flowers mainly in the wet season (July—October), but also in April, when the rocks are quite dry."

Distrib.—From Bengal to Ceylon and Singapore.

14. **Fimbristylis** Vahl.

18. **F. dichotoma** Vahl. F.B.I. vi, 635 ; Prain, Beng. Pl. ii, 1153.

Scirpus pallescens Roxb. Fl. Ind. ii, 229.

Loc.—Barkuda. No. 1473.

" A sedge found in the sandy foreshore on the south side of the island."

Distrib.—Throughout India and the warm regions of the old world.

15. **Bulbostylis** Kunth.

(*Included as a section of Scirpus in Eng. and Prantl Pflanz. Fam.* II, 2.)

19. **B. barbata** Kunth. F.B.I. vi, 651 ; Prain, Beng. Pl. ii, 1156.

Scirpus monander et S. antarcticus (non Linn.)—Roxb. Fl. Ind. i, 222, 223.

Loc.—Barkuda. Nos. 1205 and 1388.

"A very common species on bare soil in the rainy season. No. 1205 gathered at the edge of the well; No. 1388 gathered on the sand of the shore near upper flood-level."

Distrib.—Throughout India and all warm regions.

20. **B. barbata** Kunth. var. **pulchella** Thw. F.B.I. vi, 652.

Loc.—Barkuda. Nos. 1225 and 1277.

"No. 1277 growing among rocks at the edge of the pond."

Wight regarded this and the type as one species and Clarke admits that, in many intermediate forms, the var. *pulchella* is hardly separable from the type.

Distrib.—Throughout India.

16. Scirpus Linn.

21. **S. littoralis** Schrad. F.B.I. vi, 659; Prain, Beng. Pl. ii, 1161.

S. pectinatus Roxb. Fl. Ind. i, 218.

Loc.—Cherriakuda. No. 1469.

This rush forms a large bed in lake on the north shore of Cherriakuda but has not been found in Barkuda.

Distrib.—Throughout India, Europe, Africa, W. Asia and Australia.

VII. COMMELINACEAE.

17. Cyanotis D. Don.

22. **C. cristata** Schultes. f. F.B.I. vi, 385; Prain, Beng. Pl. ii, 1085.

Tradescantia imbricata Roxb. Cor. Pl. 2. 108; Roxb. Fl. Ind. ii, 120.

Loc.—Barkuda. Nos. 1215 and 1316.

"Disappears in the dry season. No. 1215 found in the shade in the chinks of plaster of brick walls, No. 1316 on rock-wall of the pond. Both found in the rainy season. A few plants survive till December."

Distrib.—Throughout tropical India in hilly districts, Burma and Ceylon. Also Malay Islands, Mauritius and Tropical Africa.

VIII. LILIACEAE.

18. Asparagus Linn.

23. **A. racemosus** Willd. F.B.I. vi, 316; Prain, Beng. Pl. ii, 1070; Roxb. Fl. Ind. ii, 151.

Loc.—Barkuda. No. 1477.

"Growing on *Canthium parviflorum*. Occasionally seen on the island, but never found in flower."

Distrib.—Tropical and sub-tropical India, also tropical parts of the Pacific region and Africa.

18*a*. Gloriosa Linn.

23*a*. **G. superba** Linn. F.B.I. vi, 358; Roxb. Fl. Ind. ii, 143.

Loc.—Barkuda.

This plant was found on the island by Dr. Gravely when the report was in the press.

Distrib.—Throughout Tropical India, Malacca, Cochin China and Tropical Africa.

IX. DIOSCOREACEAE.

19. **Dioscorea** Linn.

24. **D. oppositifolia** Linn. F.B.I. vi, 292; Roxb. Fl. Ind. iii, 804.

Loc.—Barkuda. Nos. 1259, 1331 and 1374.

"Not uncommon in thickets, especially in those of *Weihea ceylanica*."

Distrib.—Tropical India, southwards to Ceylon.

25. **D. sativa** Linn. F.B.I. vi, 295.

D. bulbifera Br. Dc. Prodr. 294 (in part).

D. bulbifera Br. var. *sativa* ex. Herb. Hort. Bot. Calc.; Prain, Beng. Pl. 1066.

Loc.—Barkuda. No. 1273.

"Not uncommon in the rainy season in *Glycosmis* thickets."

Distrib.—Throughout the tropics.

DICOTYLEDONEAE.

X. MORACEAE.

20. **Plecospermum** Trecul.

26. **P. spinosum** Trecul. F.B.I. v, 491.

Batis spinosa Roxb. Fl. Ind. iii, 763.

Loc.—Barkuda. No. 1373, and 1452.

"A creeper in mixed thickets, climbing on *Azadirachta indica*."

Distrib.—Throughout India.

21. **Ficus** Linn.

27. **F. gibbosa** Blume. var ? F.B.I. vi, 496; King, Ann. R.B.G. 1, pt. i, 6 and pl. 2.

Loc.—Barkuda. No. 1202.

"No. 1202 grows as an epiphyte on the banyan and other fig trees. Figs bright yellow when ripe." It does not conform with any of the varieties of this protean species mentioned in F.B.I.

Distrib.—Throughout India near the bases of hill ranges, Burma, Ceylon and the Malay Peninsula. Also in Hongkong.

28. **F. gibbosa** Blume. var. **parasitica** Koenig. F.B.I. v, 497; King, Ann. R.B.G. 1, pt. i, 6, and pl. 26; Prain, Beng. Pl. ii, 979.

F. parasitica Koenig, Willd. Act. Berol. 25. tab 3.

F. sclerophylla Roxb. Fl. Ind. iii, 546.

Loc.—Barkuda. Nos. 1307, 1372, 1455, 1456 and 1465.

"No. 1307 is a shrub growing on the side of a well. A single seedling was found as an epiphyte on *Premna latifolia* in April, and another on the banyan." Elsewhere found as a large tree with branches, at least on the upper parts, growing upright.

Leaves dark and glossy but scabrid, figs bright yellow. On one specimen the leaves were found dotted with white spots due to the swelling of the epidermis through the action of some disease.

Distrib.—Behar, Central India and the Deccan.

29. **F. bengalensis** Linn. F.B.I. v, 499; King, Ann. R.B.G. i, pt. 1, 18 and pl. 13; Prain, Beng. Pl. ii, 979–80.

F. indica Linn. Fl. Ind. iii, 539.

Loc.—Barkuda. Nos. 1245 and 1248 and 1457. Banyan. "*Bar gāchh.*"

"One of the commonest indigenous trees on the island but now apparently dying out. In April, 1920, only one young plant could be discovered. It was growing as an epiphyte on a Nim Tree. Figs red when ripe."

Distrib.—Planted in all the plains of India, said to be wild only in the Sub-Himalayan Forests and on the lower slopes of the Deccan hills.

30. **F. retusa** Linn. F.B.I. v, 511; King, Ann. R.B.G. 1, pt. i, 51 and pl. 62; Prain, Beng. Pl. ii, 980.

F. Benjamina Willd. Fl. Ind. iii, 550.

Loc.—Barkuda. Nos. 1229, 1459 and 1524.

"This is a large tree, common on the island with a spreading growth and stout adventitious roots like the Banyan."

Distrib.—South India, East Himalayas through Assam to Burma and the Malayan region.

31. **F. religiosa** Linn. F.B.I. v, 513; King, Ann. R.B.G. 1, pt. i, 55 and pl. 67 A; Prain, Beng. Pl. ii, 980, Roxb. Fl. Ind. iii, 547.

Loc.—Barkuda. Nos. 1458, 1462 and 1522.

"By no means common on the island; always as an epiphyte on another Ficus."

Distrib.—Said to be wild only in the Sub-Himalayan forests, Bengal and Central India. Universally planted throughout India and Ceylon but less frequently in Burma and rarely in Malayan region.

32. **F. arnottiana** Miq. F.B.I. v, 513; King, Ann.R.B.G. Calc. i. 56 and pl. 68.

Loc.—Barkuda. No. 1384, 1461 and 1476.

"A large tree, not at all common. Figs dull purple when fully ripe."

Distrib.—In rocky places of the Deccan Peninsula and Ceylon.

33. **F. infectoria** Roxb. var. **Lambertiana** (*sp.* Miq.) F.B.I. v, 516; King, Ann. R.B.G. Calc. i, 63, and pl. 76; Prain, Beng. Pl. ii, 981.

Loc.—Barkuda. Nos. 1453 and 1454.

"Large tree common in the island, with coriaceous leaves having broad bases, often without adventitious roots. Figs white when ripe flushed with red or purple and dotted when young."

Distrib.—Chota Nagpur through Central India to the Deccan and Ceylon.

34. **F. geniculata** Kurz. F.B.I. v, 516; King, *Ficus* 64, pl. 80; Prain, Beng. Pl. ii, 981.

Loc.—Barkuda. No. 1523.

"A large tree, rare on the island."

Distrib.—East Himalayas to Burma and the Malayan region.

XI. CHENOPODIACEAE.

22. **Suaeda** Forsk.

35. **S nudiflora** Moq. F.B.I. v, 14; Prain, Beng. Pl. ii, 878.

Salsola nudiflora Willd. Fl. Ind. ii, 60.

Loc.—Barkuda. Nos. 1478 and 1506.

"Found on the beach in April. In flower in June, but is then dying down."

Distrib.—On the sea coast Bengal, Bombay, Deccan and Ceylon.

XII. AMARANTACEAE.

23. **Ærua** Forsk.

36. **Æ. lanata** A. Juss. F.B.I. iv, 728; Prain, Beng. P. ii, 874.

Achyranthes lanata Linn. Fl. Ind. i, 676.

Loc.—Barkuda. Nos. 1247 and 1368.

"No. 1247, found growing in the wall at the edge of pond, is much larger than the other, which is dwarfed." One of the most striking example of edaphic variation among the plants of the island.

Distrib.—Throughout India in all situations.

24. **Alternanthera** Forsk.

37. **A. sessilis** Br. F.B.I. iv, 731; Prain, Beng. Pl. ii, 875.

Achyranthes triandra Roxb. Fl. Ind. i, 678.

Loc.—Barkuda. No. 1527.

Found in pockets of sand on rocky beach in April; a few scattered plants only.

Distrib.—Throughout India and Ceylon as in all warm countries.

XIII. NYCTAGINACEÆ.

25. **Boerhavia** Linn.

38. **B. diffusa** Linn. Sp. Pl. 3; Duthie, Fl. Gang. Pl. iii, 2.

B. repens L. var. *diffusa* F.B.I. iv, 709.

Loc.—Barkuda. Nos. 1239, 1308, 1328, 1470 and 1471.

"A common weed.

No. 1239 was found growing among stones at edge of lake in rains, while No. 1308 was growing on bare stony ground. No. 1328 trailing over bushes in undergrowth is more luxuriant than 1308. Common in such situations at all seasons."

Distrib.—Throughout India. Also in tropical Asia, Africa and America.

XIV. AIZOACEÆ.

26. **Mollugo** Linn.

39. **M. stricta** Linn. F.B.I. ii, 663.

Loc.—Barkuda. Nos. 1212, 1219, 1345 and 1514.

"No. 1212 was found growing at the edge of the well, No. 1219 on stony ground in shade is much smaller, while No. 1345 is from bare stony soil and hence is provided with long primary roots."

Distrib.—Throughout India and Ceylon on dry stony ground. In South and East Asia.

40. **M. Spergula** Linn. F.B.I. ii, 662 ; Prain, Beng. Pl. ii, 533.

M. verticillata Roxb. (non Linn.) Fl. Ind. i, 360.

Loc.—Barkuda. Nos. 1463 and 1513.

"On damp rocks on the edge of the pond in rainy season."

Distrib.—Throughout India from the base of the Himalayas: also Tropical Africa and Australia.

XV. PORTULACACEAE.

27. Portulaca Linn.

41. **P. quadrifida** Linn. var. **meridiana** Calc. Herb. Mss. F.B.I. i, 247 ; Prain Beng. Pl. i, 240.

P. meridiana Linn. Roxb. F. I. ii, 463.

Loc.—Barkuda. No. 1216.

"Growing among stones at the edge of and on the top of walls ; also on stones near the shore of the lake. Flowers in rainy season and also in June before rains begin."

Distrib.—Throughout India and Ceylon. In Tropical Asia and Africa.

XVI. CARYOPHYLLACEAE.

28. Polycarpæa Lamk.

42. **P. corymbosa** Lamk. F.B.I. i, 245 ; Prain, Beng. Pl. ii, 239.

Celosia corymbosa Roxb. Fl. Ind. i, 681.

Loc.—Barkuda. No. 1390.

"Growing up only in dry weather. Single plant on footpath."

Distrib.—Throughout India, Burma and Ceylon and in the tropics of Asia, Africa, Australia and America.

XVII. MENISPERMACEAE.

29. Missampelos Linn.

43. **C. Pareira** Linn. F.B.I. i, 103 ; Prain, Beng. Pl. i, 208.

Loc.—Barkuda. Nos. 1251 and 1280.

"Creeper on prickly pear. Flowers in rainy season: common."

Distrib.—Throughout tropical India. Cosmopolitan in warm regions.

30. Tinospora Miers.

44. **T. cordifolia** Miers. F.B.I. i, 97 ; Prain, Beng. Pl. i, 209.

Menispermum cordifolium Willd. Roxb. Fl. Ind. iii, 811.

Loc.—Barkuda. No. 1292.

" Creeper on a large fig-tree : only one plant seen."

Distrib.—Throughout tropical India and Ceylon. Cosmopolitan in warm regions.

XVIII. ANONACEAE.

31. **Anona** Linn.

45. **A. squamosa** Linn. F.B.I. i, 78 ; Prain, Beng. Pl. i, 206 ; Roxb. Fl. Ind. ii, 657.

Loc.—Barkuda. No. 1228.

The custard-apple and ātā of India and the sweet-sop of the W. Indies.

"Has run wild and become very abundant on Barkuda, where it produces excellent fruit in September."

Distrib.—An inhabitant of tropical America naturalised throughout India.

32. **Alphonsea** Hf. and T.

46. **Alphonsea** sp. ? nov.

Loc.—Barkuda. Nos. 1232, 1249, 1310 and 1512.

A common tree in the island.

Distrib.—South India and Ceylon.

XIX. LAURINEAE.

33. **Cassytha** Linn.

47. **C. filiformis** Linn. F.B.I. v, 188; Prain, Beng. Pl. ii, 904 ; Roxb. Fl. Ind. ii, 314.

Loc.—Barkuda. Nos. 1242 and 1508.

" Parasite on various trees including the Nim."

Distrib.—Throughout India. In tropical parts of Asia, Africa and America.

XX. CAPPARIDACEAE.

34. **Capparis** Linn.

48. **C. brevispina** DC. Prodr. 24; Gamble, Fl. Mad. i, 45.

C. zeylanica Wall. (not of Linn.) ; F.B.I. i, 174; Prain, Beng. Pl. i, 226 ; Roxb. Fl. Ind. ii, 568.

Loc.—Barkuda. No. 1262.

" A common shrub, the leaves of which are almost always destroyed by insects and deer. Flowers in April, fruit ripe in June."

Distrib.—Common, usually near the coast. in the Carnatic and Malabar also Ceylon.

49. **C. Roxburghii** DC. F.B.I. i, 175.

C. corymbosa Roxb. Fl. Ind. ii, 569.

Loc.—Barkuda. No. 1332.

" A large creeper with red fruits growing over trees at the edge of the island and occasionally inland. Flowers in October and April."

Distrib.—Confined to the W. Ghauts and the Carnatic.

50. **C. sepiaria** Linn. F.B.I. i, 177 ; Roxb. Fl. Ind. i, 177 ; Prain, Beng. Pl. i, 227 ; Gamb. Fl. Mad. i, 46

Loc.—Barkuda and Cherriakuda. Nos. 1447 and 1468.

" Large woody climber overwhelming Nim trees in mixed thickets. It was found more luxuriant and flourishing on Cherriakuda than on Barkuda, on which only one plant was observed. Flowers in April."

Distrib.—Throughout India and Ceylon also in the Philippines.

35. **Crataeva** Linn.

51. **C. religiosa** Forst. F.B.I. i, 172 ; Prain, Beng. Pl. i, 227 ; Gamble, Fl. Mad. ii. 47.

Capparis trifoliata Roxb. Fl. Ind. ii, 571.

Loc.—Barkuda. Nos. 1261 and 1287.

One of these specimens is quite peculiar in having dimorphic flowers. There is a tendency for the ovary in some of the flowers to split into two and form 2 separate ovaries on two distinct gynophores, each with two separate parietal placentae. A detailed note on it, with diagrams, will appear in a separate paper.

" A common tree at the edge of the marginal zone. Several trees (? planted) near the bungalow flower both in September and in the winter months. Most trees, however, usually begin to flower in December, while some are in flower till April. Petals pale yellow. Fruit ripens in July, scarlet when ripe. The trees are in full leaf when in fruit. In flower they are almost bare or with young shoots just coming out."

Distrib.—Indigenous only in Malabar and Canara, near streams, elsewhere cultivated. Also in tropical Africa.

XXI. LEGUMINOSAE.

SUB-ORDER MIMOSOIDEAE.

36. **Albizzia** Durazz.

52. **A. odoratissima** Benth. F.B.I. ii, 299; Prain, Beng. Pl. i, 461.

Mimosa odoratissima Roxb. Fl. Ind. ii, 546.

Loc.—Barkuda. No. 1378.

" A tree in sandy area in *Weihea*-thickets, scarce."

Distrib.—In India from Central Himalayas, also Malacca.

37. **Dichrostachys** DC.

53. **D. cinerea** W. and A. F.B.I. ii, 288 ; Prain, Beng. Pl. i, 543.

Mimosa cinerea Roxb. Fl. Ind. ii, 561.

Loc.—Barkuda. No. 1370.

"Small tree, scarce on the island, though common on Ganta Sila near Rambha. Proximal part of inflorescence mauve, distal bright yellow."

Distrib.—Throughout India. In Malay Islands and North Australia. Baker observes that it is doubtfully distinct from *D. natans* of Tropical Africa.

38. **Acacia** Willd.

54. **A. intsia** Willd. F.B.I. ii, 297; Prain, Beng. Pl. i, 459.

Mimosa intsia Roxb. Fl. Ind. ii, 565.

Loc.—Barkuda. No. 1313.

"An overwhelming prickly climber common on Barkuda, coming into flower in September. Its flowering period lasts only a few weeks. Seeds are ripe in December."

Distrib.—Throughout India and Ceylon.

SUB-ORDER PAPIPIONACEAE.

39. **Crotalaria** Linn.

55. **C. striata** DC. F.B.I. ii, 84.

C. saltiana Andr. Prain, Beng. Pl. i, 373.

Loc.—Barkuda. No. 1293.

"An herbaceous shrub very common on places entirely cleared of jungle, especially towards the end of the rainy season and for some months later. Dies down at the end of winter."

Distrib.—Throughout India, Malay Islands, Tropical Africa and America.

40. **Indigofera** Linn.

56. **I. linifolia** Retz. var. **Campbellii.** F.B.I. ii, 92; Roxb. Fl. Ind. iii, 370; Prain, Beng. Pl. i, 431.

Loc.—Barkuda. No. 1366.

"Single plant on bare soil in hot weather."

Distrib.—Throughout India and Ceylon, extending in the N.W. to Afghanistan and in the east to the Malay Islands. Also North Africa and Australia.

41. **Tephrosia** Pers.

57. **T. purpurea** DC. F.B.I. ii, 112; Prain, Beng. Pl. i, 405.

Loc.—Barkuda. No. 1294.

"In June to September this is the most abundant plant on places entirely cleared of jungle. After September it begins to die down."

Distrib.—Throughout India a common weed, and found everywhere in the tropics.

42. **Dalbergia** Linn.

58. **D. monosperma** Dalz. F.B.I. ii, 297.

D. torta Grah. in Wall. Cat. 5879.

Loc.—Barkuda. Nos. 1379, 1510, 1518.

"An overwhelming creeper with small leaves. Flowers in March and April for a short period only."

Distrib.—South India and Ceylon, China and the Pacific region.

43. **Pongamia** Vent.

(*Galedupa*[1] *Lam. in Eng. and Prantl Pflanz.* iii, 3, 334.)

59. **P. glabra** Vent. F.B.I. ii, 240; Prain, Beng. Pl. i, 407.

Galedupa indica Roxb. Fl. Ind. iii, 239.

G. pinnata Linn. Eng. and Prantl Pflanz. iii, 3, 344.

Loc.—Barkuda. Nos. 1330 and 1333.

"A tree growing in an almost complete ring round the island within high water level. In full flower in April, a few trees coming into flower in December. In fruit at all seasons. I know of only one tree, surrounded by seedlings, in the interior of Barkuda."

44. **Derris** Lour.

(*Deguelia*[1] *Aubl. in Eng. and Prantl.* III, 3, 345.)

60. **Derris scandens** Benth. F.B.I. ii, 240; Prain, Beng. Pl. i, 408.

Dalbergia scandens Roxb. Fl. Ind. iii, 232.

Deguelia timoriensis DC. Eng. and Prantl Pflanz. iii, 3, 345.

Loc.—Barkuda. No. 1238.

"A large climbing shrub, with flowers rosy white. Flowers in rainy season, several times in succession."

Distrib.—Throughout India, China and the Pacific region.

45. **Abrus** Linn.

61. **A. precatorius** Linn. F.B.I. ii, 175; Prain, Beng. Pl. i, 369; Roxb. Fl. Ind. iii, 258.

Loc.—Barkuda. No. 1283.

"Only one plant, dead and in seed, seen on Barkuda, in rainy season."

Distrib.—Cosmopolitan in the tropics.

46. **Canavalia** Linn.

62. **C. ensiformis** DC. F.B.I. ii, 195; Prain, Beng. Pl. i, 394.

Dolichos gladiatus Roxb. Fl. Ind. iii, 300.

Loc.—Barkuda. No. 1365.

"The sword-bean. Flowers towards the end of rainy season."

Distrib.—Throughout the tropics, generally cultivated as a vegetable.

63. **C. virosa** Prain, Beng. Pl. i, 394; Gamble, Fl. Mad. ii, 359.

C. ensiformis DC. var. *virosa*. F.B.I. ii, 196.

Dolichos virosus Roxb. Fl. Ind. iii, 301.

Loc.—Barkuda.

[1] *Pongamia* and *Derris* are both "nomina conservanda" in the Vienna list.

"A climber. It forms the food of the caterpillars of *Papilio hector* and *P. aristolochiae* on the island. Flowers towards the end of the rainy season."

Distrib.—Throughout India.

XXII. RUTACEAE.

47. **Toddalia** A. Juss.

64. **T. asiatica Lamk. var. gracilis. Gamble**, Fl. Mad. I. i, 151.

T. aculeata Pers. F.B.I. i, 497 ; Prain, Beng. Pl. i, 299.

Scopolia aculeata Roxb. Fl. Ind. i, 616.

Loc.—Barkuda. No. 1281.

"A climbing shrub."

Distrib.—Throughout India, Malay Islands, and China.

48. **Glycosmis** Correa.

65. **G. pentaphylla** Correa. F.B.I. i, 499; Prain, Beng. Pl. i, 300.

Limonia pentaphylla Roxb. Fl. Ind. ii, 381.

Glycosmis cochinchinensis (Lour.) Pierre, Eng. and Prantl. Pflanz. 3, 4, 185.

Loc.—Barkuda. No. 1286.

"A common shrub. Flowers at all seasons, but most profusely in April at the same time as *Weihea ceylanica*."

Distrib.—Throughout India and the Pacific region.

49. **Atalantia** Correa.

66. **A. monophylla** Correa. F.B.I. i. 511 ; Prain, Beng. Pl. i, 301 ; Gamble, Mad. Fl. i.

Limonia monophylla Roxb. Fl. Ind. ii, 378.

Loc.—Barkuda. No. 1460.

"Not uncommon in the island."

Distrib.—Throughout Deccan and Ceylon, also in Sylhet and the Khasia Hills.

XXIII. MELIACEAE.

50. **Azadirachta** A. Juss.

67. **A. indica** A. Juss. Eng. and Prantl. Pflanz. iii, 4, 288; Gamble Fl. Mad. I, i, 177.

Melia Azadirachta Linn. F.B.I. i, 544 ; Prain, Beng. Pl. i, 314; Roxb. Fl. Ind. ii, 394.

Loc.—Barkuda. No. 1230.

"Flowers in April and in August : the most abundant tree on the island. The fruit is ripe in June."

Distrib.—Throughout India and in warm countries. Often planted.

51. **Cipadessa** Blume.

68 **C. fruticasa** Bl. F.B.I. i, 545.

Loc.—Barkuda. No. 1353.

'A bushy shrub or small tree.'

Distrib.—From Concan and Circars southwards.

52. **Walsura** Roxb.

69. **W. piscida** Roxb. F.B.I. i, 564; Roxb. Fl. Ind. ii, 389.

Loc.—Barkuda. Nos. 1329, 1339 and 1451.

"A small tree in mixed thickets. In flower in October, fruit ripe in April."

Distrib.—Deccan and the Punjab. Beddome found it common in the hilly forests of the Northern Division of the Madras Presidency.

XXIV. EUPHORBIACEAE.

53. **Phyllanthus** Linn.

70. **P. Niruri** Linn. F.B.I. v, 298; Prain, Beng. Pl. ii, 936; Roxb. Fl. Ind. iii, 659.

Loc.—Barkuda. No. 1235.

"Very abundant, growing among stones. Flowers in August, disappears in winter and begins to appear again in April."

Distrib.—Throughout the hotter parts of India and the tropics generally except Australia.

71. **Phyllanthus** sp., aff. *P. ? debilis* Ham. F.B.I. v, 299.

Loc.—Barkuda. No. 1291.

"Growing among rocks at edge of lake. Flowers in September."

Distrib.—Throughout Upper India and Deccan to Tropical Africa.

54. **Jatropha** Linn.

72. **J. gossypifolia** Linn. F.B.I. v, 383; Prain. Beng. Pl. ii, 941.

Loc.—Barkuda. No 1256.

"Common both in the jungle and in the open."

Distrib.—A native of Brazil, also in tropical America and Africa. In India extensively naturalized.

55. **Euphorbia** Linn.

73. **E. hirta** L. Roxb. Fl. Ind. ii, 472.

E. pilulifera Jacq. (non Linn.) Fl. Br. Ind. v, 250; Prain, Beng. Pl. ii, 925.

Loc.—Barkuda.

"On bare stony ground near the house in April: a single plant."

Distrib.—Throughout India and Ceylon. Also in all tropical and sub-tropical countries. Largely collected in Orissa for export to America where they make it into medicine.

74. **E. thymifolia** Burm. F.B.I. v, 252; Prain, Beng. Pl. ii, 925; Roxb. Fl. Ind. ii, 473.

Loc.—Barkuda. No. 1241.

"Growing profusely on sand in open dry stony places at all seasons."

Distrib.—Throughout India and Ceylon; also in all hot countries except Australia.

75. **E. neriifolia** Linn. F.B.I. v, 255; Prain, Beng. Pl. ii,470; Roxb. Fl. Ind. ii, 470.

Loc.—Barkuda. No. 1367.

"A small tree. Begins to flower in December. Fruits in April, in which month a few trees are still in flower."

Distrib.—Deccan Peninsula, in Bengal, Burma and Ceylon but probably cultivated. Also in Malay Islands and Baluchistan.

76. **E. antiquorum** Linn. F.B.I. v, 255; Prain. Beng. Pl. ii, 923; Roxb. Fl. Ind. ii, 468.

Loc.—Barkuda. No. 1369.

"A tree-Euphorbia on rocks. Begins to flower in December. Fruits in April."

Distrib.—Throughout the hotter parts of India and Ceylon, often planted.

56. **Excoecaria** Linn.

77. **E. agallocha** Linn. F.B.I. v, 472; Prain, Beng. Pl. ii, 955; Roxb. F. Ind. iii, 756.

Loc.—Barkuda. No. 1344.

"Solitary tree growing in gravel by edge of lake amongst Nim and *Crataeva*."

Distrib.—The tidal forests on the coasts of India and Ceylon, extending throughout the Pacific region.

XXV. ANACARDIACEAE.

57. **Odina** Roxb.

(Lannea A. Rich.[1])

78. **O. Wodier** Roxb. F.B.I. i, 29; Prain, Beng. Pl. i, 354; Roxb. Fl. Ind. ii, 293.

Calesium grande O. Ktze. Eng. and Prantl. Pflanz. iii, 5, 153.

Loc.—Barkuda. No. 1375.

"A large tree not uncommon in the sandy area on the north side of the Island. Flowers in April without leaves."

Distrib.—Throughout India. Yields a gum.

XXVI. HIPPOCRATEACEAE.

58. **Hippocratea** Linn.

79. **H. indica** Willd. F.B.I. i, 624; Prain, Beng. Pl. i, 332; Roxb. Fl. Ind. i, 165.

Loc.—Barkuda. Nos. 1264, 1266, 1284, 1312 and 1383.

"An overwhelming creeper. Very common on the island. Flowers at least from September to June."

Distrib.—Throughout the hotter parts of India, Malay Archipelago and Africa.

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[1] *Lannea* of A. Richmond is a "nomen conservandum," both *Odina* of Roxburgh and *Calesium* of Adans. are "nomina rejicienda" in the Vienna list.

XXVII. SAPINDACEAE.

59. **Allophyllus** Linn.

80. **A. Cobbe** Bl. var. **glabra** F.B.I. i, 674; Prain. Beng. Pl. i, 343.

Orinthotrope glabra Roxb. Fl. Ind. ii, 267.

Loc.—Barkuda. No. 1231.

Distrib.—Common throughout India, extending to Malayan Archipelago and Australia, perhaps also to Africa and America.

60. **Hemigyrosa** Bl.

81. **H. canescens** Thw. F.B.I. i, 671.

Molinaea canescens Roxb. Cor. Pl. i. 43, t. 60; Fl. Ind. ii, 243.

Deinbollia canescens Pers. Eng. and Prantl. Pflanz. iii, 5, 315.

Loc.—Barkuda. No. 1360.

"A Mango-like tree, flowering in April. In June and the rainy season only remains of dead fruit were found."

Distrib.—In the Deccan and Ceylon, also Burma.

XXVIII. RHAMNACEAE.

61. **Zizyphus** Juss.

82. **Z. Oenoplia** Mill. F.B.I. i, 634; Prain, Beng. Pl. i, 334; Roxb. Fl. Ind. i, 611.

Z. Oenoplia (L.) DC. Eng. and Prantl Pflanz. iii, 5, 402.

Loc.—Barkuda. Nos. 1272 and 1334.

"A thorny climbing shrub, common in mixed thickets. Flowers in August and September."

Distrib.—Throughout India, particularly in the hotter parts; Tropical Asia and Australia.

XXIX. VITACEAE.

62. **Cissus** Linn.

83. **C. vitiginea** Linn. Eng. and Prantl. Pflanz. iii, 5, 450; Gamble, Fl. Mad. I, ii, 234.

Vitis Linnae Wall. F.B.I. i, 649.

Loc.—Barkuda. Nos. 1222 and 1253.

"Growing over trees in jungle; flowers throughout rainy season; leafless in April, coming into leaf and flower at beginning of June. Flowers very attractive to butterflies of various kinds."

Distrib.—The Deccan from Concan southwards and Ceylon.

84. **Cissus quadrangularis** Linn. Eng. and Prantl Pflanz. iii, 5, 452; Roxb. Fl. Ind. i, 407; Gamble Fl. Mad. I, ii, 233.

Vitis quadrangularis Wall. F.B.I. i, 645; Prain, Beng. Pl. i, 338.

Loc.—Barkuda. Nos. 1271 and 1358.

"A very common climber on every kind of tree and shrub, especially on the

larger *Ficus*: springs up readily in deep shade on stony ground. In full flower at the beginning of June."

Distrib.—Throughout India and Ceylon; Malay Islands and East Africa.

63. **Cayratia** Juss.

85. **Cayratia carnosa Gagnepain.** Gamb. Fl. Mad. I, ii, 237.

Vitis carnosa Wall. F.B.I. i, 654.

Loc.—Barkuda. No. 1268.

"Usually not so large a plant as *Cissus vitiginea* and coming into leaf and flowers later."

Distrib.—Throughout India and Ceylon. Also Malacca.

XXX. TILIACEAE.

64. **Grewia** Linn.

86. **G. ? orientalis** Linn. F.B.I. i, 384.

Loc.—Barkuda. No. 1220.

"In thickets, not common."

Distrib.—Southern parts of the Deccan and Ceylon.

XXXI. MALVACEAE.

65. **Sida** Linn.

87. **S. cordifolia** Linn. F.B.I. i, 324; Prain, Beng. Pl. i, 258; Roxb. Fl. Ind. iii, 177.

Loc.—Barkuda. No. 1338.

A weed of road-side and waste land in all districts.

"Quite common on the island but always eaten down by deer. Flowers at the end of the rains."

Distrib.—Throughout India and the tropics.

XXXII. OCHNACEAE.

66. **Ochna** Linn.

88. **O. squarrosa** Linn. F.B.I. i, 523; Prain, Beng. Pl. i, 309; Roxb. Fl. Ind. ii, 643.

Loc.—Barkuda. No. 1337.

"A tree in substituted thickets, not at all abundant. Flowers in April."

Distrib.—The Deccan and Ceylon. Also from Assam to Burma.

XXXIII. VIOLACEAE.

67. **Ionidium** Vent.

89. **I. suffruticosum** Ging. F.B.I. i, 185; Prain, Beng. Pl. i, 228.

Viola suffruticosa Roxb. Fl. Ind. i, 649.

Loc.—Barkuda. No. 1203.

"On edge of wells, typical. Flowers in the rains.

Distrib.—Throughout India.

XXXIV. CACTACEAE.

68. **Cereus** Haw.

90. **Cereus** sp.

Loc.—Barkuda. Nos. 1268 and 134.

Columnar cactus, run wild. In Records Bot. Surv. Ind. iv, p. 287, etc. Mr. Burkill mentions *Cereus pterogonus* Lemaire as a columnar *Cereus* common in India and he cites fig. 5360 in Bot. Mag. as his authority. It has, however, been since pointed out that *C. pterogonus* is a climbing species. The cactus generally believed to be a *Cereus* and seen round Calcutta may not be a true *Cereus*. At this stage it is therefore difficult to name any of the introduced *Cerei*.

"Flowers in hot weather and rains."

69. **Opuntia** Tourn.

91. **Opuntia** sp.

Loc.—Barkuda. Nos. 1269 and 1448.

"In full flower in April. Only one species of this genus, with flowers of a curious shade of orange shaded with pink, occurs on Barkuda. On the neighbouring islands another species is also found (No. 1466) in smaller numbers. It has bright yellow flowers the outer petals of which are stained with scarlet, and its spines growing singly are larger, firmer and less easily detached." The latter is probably *O. monocantha*, but there has been much confusion about the species of *Opuntia* feral in India.

XXXV. LECYTHIDACEAE.

70. **Barringtonia** Forst.

92. **B. acutangula** Gaertn. F.B.I. ii, 508; Prain, Beng. Pl. i, 493; Roxb. Fl. Ind. ii, 508.

Loc.—Barkuda. No. 1244.

"A single tree growing at edge of lake. It flowers at several times in succession between the beginning of June and October. In 1920 the first flowers opened at the end of the first week in June. At this time the tree was the only tree or shrub in full flower on the island."

Distrib.—Throughout India.

XXXVI. RHIZOPHORACEAE.

71. **Weihea** Spreng.

93. **W. ceylanica** Baill. F.B.I. ii, 441.

Loc.—Barkuda. Nos. 1240, 1265, 1381 and 1382.

"In profuse flower in April for a few days only. Fruit-capsules dehiscing in June."

Distrib.—Mysore, Carnatic and Ceylon at low levels.

XXXVII. COMBRETACEAE.

72. **Combretum** Linn.

94. **C. extensum** Roxb. F.B.I. ii, 458; Roxb. Fl. Ind. ii, 229.
C. rotundifolium Roxb. Fl. Ind. ii, 228.

Loc.—Barkuda. No. 1380.

"An overwhelming creeper very common in mixed thickets. Towards the end of the rains it sends out long shoots. These bear the flowers sometime between December and April. In the former month and also in the rains a careful but unsuccessful search was made for flowers; in April the seeds were ripe or nearly so."

Distrib.—Deccan Peninsula and Ceylon also Malaya.

XXXVIII. MYRTACEAE.

73. **Eugenia** Linn.

95. **E. bracteata** Roxb. F.B.I. ii, 502; Prain, Beng. Pl. ii, 490; Roxb. Fl. Ind. ii, 490.

Loc.—Barkuda. No. 1296.

"A small tree in sandy area. In flower in April."

Distrib.—Sylhet and plains of S. India, especially near the sea.

XXXIX. PLUMBAGINACEAE.

74. **Plumbago** Linn.

96. **P. zeylanica** Linn. F.B.I. iii, 480; Prain, Beng. Pl. i, 639; Roxb. Fl. Ind. i, 462.

Loc.—Barkuda. No. 1349.

"Scarce on the island, a common plant on the adjacent mainland."

Distrib.—Throughout India also throughout the tropics in the old world.

XL. SAPOTACEAE.

75. **Mimusops** Linn.

97. **M. hexandra** Roxb. F.B.I. iii, 549.

Loc.—Barkuda. No. 1302 A.

"Two trees growing among rocks at edge of lake. Flowering in September."

Distrib.—Common in the Deccan Peninsula and Ceylon, extending north through Guzerat to Banda; elsewhere cultivated.

XLI. SALVADORACEAE.

76. **Salvadora** Linn.

98. **S. persica** Linn. F.B.I. iii, 619; Prain, Beng. Pl. i, 663; Roxb. Fl. Ind. i, 389.

Loc.—Barkuda. No. 1340.

"A small tree found growing only among rocks at the edge of the lake, except

for a single small specimen observed on the coping of a well. Trunk thick and usually more or less distorted and twisted. Leaves very bright green; not in flower or fruit between August and end of December: fruits ripening in April."

Distrib.—Throughout India, Arabia, Syria and E. Africa. Often planted.

77. **Azima** Lamk.

99. **A. tetracantha** Lamk. F.B.I. iii, 620; Prain, Beng. Pl. i, 663; Roxb, Fl. Ind. iii, 765.

Loc.—Barkuda. No. 1376.

"A spiny creeper growing over *Weihea* in sandy area: scarce on island."

Distrib.—Deccan Peninsula and Ceylon. According to Roxburgh one of the commonest shrubs of Coromandel, growing in all situations.

XLII. LOGANIACEAE.

78. **Strychnos** Linn.

100. **S. ? nux-vomica** Linn. F.B.I. iv, 90; Prain, Beng. Pl. ii, Roxb. Fl. Ind. ii, 261 (ed. Carey and Wall).

Loc.—Barkuda. Nos. 1356, 1385.

"A fairly common tree in mixed thickets. Flowering and fruiting in April."

Distrib.—N. Circars.

XLIII. APOCYNACEAE.

79. **Aganosma** G. Don.

101. **A. caryophyllata** (Wall.) G. Don. F.B.I. iii, 664; Prain, Beng. Pl. ii, 679.

A. dichotoma Roth. Eng. and Prantl Pflanz. iv, 2, 173.

Loc.—Barkuda. Nos. 1209 A, 1354 and 1393.

"Flowers throughout the rains, fruits dehiscing in April. Flowers with a very strong and sweet odour."

Distrib.—Bengal and the Deccan Peninsula.

XLIV. ASCLEPIADACEAE.

80. **Cryptolepis** Br.

102. **C. elegans** Wall. F.B.I. iv, 6; Prain, Beng. Pl. ii, 685.

Loc.—Barkuda. No. 1243.

" Flowers pale greenish yellow, in rains. A common creeper in mixed thickets.'

Distrib.—South India, from Sikkim eastwards to Burma, Java and S. China.

81. **Calotropis** Br.

103. **C. gigantea** Br. F.B.I. iv, 17; Prain. Beng. Pl. ii, 689.

Loc.—Barkuda. No. 1502.

'An erect shrub.' Vern. Beng. *Akand.*

Distrib.—Throughout India, Ceylon and Singapore.

104. **C. Acia** Ham. F.B.I. iv, 18; Prain, Beng. Pl. ii, 689.

Loc.—Barkuda. Nos. 1346.

"On Barkuda itself, a solitary plant was found among rocks on edge of the lake much eaten by deer and grasshoppers, but it is common on the mainland." This is the first record of its occurrence from Barkuda. It has not been known to occur till now to the South of Bengal.

Distrib.—Sub-Himalayan tracts from Dehra Dun eastwards. N. Bengal, Douars, Sikkim and Assam.

82. **Sarcostemma** Br.

105. **S. brevistigma** Wt. and Arn. F.B.I. iv, 27; Prain, Beng. Pl. ii, 692

Asclepias acida Roxb. Fl. Ind. ii, 31.

Loc.—Barkuda. Nos. 1250 and 1336.

"A trailing leafless shrub common on prickly pear. In flower in the latter part of the rains and at the beginning of June. At the latter season flowers and ripe fruits were on the plant together."

Distrib.—The Deccan and Ceylon, also in Burma.

83. **Gymnema** Br.

106. **G. sylvestre** Br. var. **ceylanica**, F.B.I. iv, 29.

Asclepias geminata Roxb. Fl. Ind. ii, 45.

Loc.—Barkuda. Nos. 1289, 1298 and 1371.

"A large woody climber not uncommon."

Distrib.—Deccan Peninsula as far as Travancore. Also Tropical Africa.

84. **Leptadenia** Br.

107. **L. reticulata** Wt. and Arn. F.B. I. iv, 63.

Asclepias tuberosa Roxb. Fl. Ind. ii, 38.

Loc.—Barkuda. No. 1246.

"Common creeper with small greenish white flowers Flowers throughout the rainy season, beginning in the hot weather."

Distrib.—Throughout India to Singapore and Ceylon.

85. **Caralluma** Br.

108. **C. adscendens** R. Br. F.B.I. iv, 76.

Stapelea adscendens Roxb. Cor. Pl. i, 28, t. 30.

Loc.—Barkuda. No. 1233.

"An erect leafless herb in small patches in open stony spaces; not uncommon."

Distrib.—Deccan Peninsula.

XLV. CONVOLVULACEAE.

86. **Ipomoea** Linn.

109. **I. sepiaria** Koen. F.B.I. iv, 209; Prain, Beng. Pl. ii, 736.

Convolvulus stipulaceus Roxb. Fl. Ind i. 484.

C. sepiaria Koen. Roxb. Fl. Ind. i, 499.

Loc.—Barkuda, also Ganta Sila. Nos. 1303 A. and 1355.

"Stray plant growing over bush near the edge of the lake on Barkuda; very common on the hill Ganta Sila near Rambha."

Distrib.—Throughout India and Ceylon. Also Malaya.

110. **I. biloba** Forsk. F.B.I. iv, 212.

Convolvulus bilobatus Roxb. Fl. Ind. i, 485.

Loc.—Barkuda. No. 1364.

"Single plants growing upon sandy foreshore in December; does not survive to flower on Barkuda."

Distrib.—Throughout India and Ceylon, especially near the sea shore. Also throughout the tropics in both hemispheres.

87. **Evolvulus** Linn.

111. **E. alsinoides** Linn. F.B.I. iv. 220; Prain, Beng. Pl. ii, 725; Roxb. Fl. Ind. ii, 106.

Loc.—Barkuda. No. 1394.

"Single plants on path in December, April and June."

Distrib.—Throughout India and Ceylon also throughout the tropical and sub-tropical areas in both hemispheres.

88. **Cressa** Linn.

112. **C. cretica** Linn. F.B.I. iv, 225; Prain, Beng. Pl. ii, 725.

C. indica Roxb. Fl. Ind. ii, 72.

Loc.—Barkuda. Nos. 1363 and 1504.

"A shore plant, growing up only when the foreshore is exposed. In flower in April, appearing first about December and dying off by the end of the hot weather."

Distrib.—Throughout India and all warm regions.

XLVI. BORAGINACEAE.

89. **Coldenia** Linn.

113. **C. procumbens** L. F.B.I. iv, 144; Prain, Beng. Pl. ii, 718; Roxb. Fl. Ind. i, 448.

Loc.—Barkuda. No. 1505.

"Forming flat mats on sandy pocket in the beach on the south side of the island; grows up between December and April and mostly dies off by the beginning of June."

Distrib.—Throughout India as a weed, also in all the other continents except Europe.

XLVII. VERBENACEAE.

90. **Lippia** Linn.

114. **L. nodiflora** Rich. F.B.I. iv, 563; Prain, Beng. Pl. ii, 825; Roxb. Hort. Beng. 4.

Loc.—Barkuda. Nos. 1474 and 1526.

"Found on the beach in April."

Distrib.—Throughout India and Ceylon. Also in all tropical and warm temperate regions.

91. **Premna** Linn.

115. **P. latifolia** Roxb. F.B.I. iv, 577; Prain, Beng. Pl. ii, 831; Roxb. Fl. Ind. iii, 76.

Loc.—Barkuda. Nos. 1445, 1449, 1450 and 1464.

No. 1464 was a fairly large upright tree, with many defoliated twigs growing at right angles from the larger branches. This was found growing by itself in an open space, but can hardly be held to be varietally distinct.

"A common plant in mixed thickets, often reaching a considerabl size. There are at least two flowering seasons, one in April, another in the rains."

Distrib.—From Bengal to the Coromandel Coast and the Circars.

116. **P. latifolia** Roxb. var. **cuneata** Cl. F.B.I. iv, 577.

Loc.—Barkuda. No. 1314.

Tree common in sandy area.

Distrib.—According to Clarke's definition given in F.B.I. var. *cuneata* seems to be confined to Burma, while the Madras var. is said to be *mollissima*, the only difference being the smaller size of the flowers.

117. **P. latifolia** Roxb. var. **viburnoides** Wall. F.B.I. iv, 578. 1224.

Loc.—Barkuda. No. 1361, 1223, 1224.

It is said to be distinguished from the other forms of *P. latifolia* by its green colour when dry instead of the characteristic blue-black. Clarke suggests that it may be a distinct species.

"Its flowers have a strong smell but this is by no means peculiar to the variety."

Distrib.—The Deccan Peninsula.

118. **P. Wightiana** Schauer. F.B.I. iv, 578.

Loc.—Barkuda. No. 1295.

"A creeper or scandent shrub with flower having a peculiar smell, very attractive to butterflies, especially to *Papilio polytes*."

Distrib.—The Deccan Peninsula.

92. **Clerodendron** Linn.

119. **C. inerme** Gaertn. F.B.I. iv, 589; Prain, Beng. Pl. ii, 835; Roxb. Fl. Ind. iii, 58.

Loc.—Barkuda and Ganta Sila. Nos. 1325 and 1301 A.

"No. 1301A. A single plant trailing on trees at the edge of the lake; very common on Ganta Sila."

Distrib.—India and Ceylon especially near the sea.

93. **Symphorema** Roxb.

120. **S. involucratum** Roxb. F.B.I. iv, 599; Prain, Beng. Pl. ii, 837; Roxb. Fl. Ind. ii, 262.

Loc.—Barkuda. No. 1507.

"One of the most common overwhelming creepers of the island. Flowers profusely in April."

Distrib.—From Behar to Ceylon.

XLVIII. SOLANACEAE.

94. **Solanum** Linn.

121. **S. trilobatum** Linn. F.B.I. iv, 236.

Loc.—Barkuda. No. 1288.

"A scandent thorny shrub. Only a single stray plant observed on the island, in a *Glycosmis* thicket."

Distrib.—Deccan Peninsula, Ceylon, and from Arracan to Malacca.

122. **S. lycopersicum.** Eng. and Prantl Pflanz. iv, 3 B. 24; Roxb. Fl. Ind. i, 565.

Lycopersicum esculentum Mill. F.B.I. iv, 237; Prain, Beng. Pl. ii, 743.

Loc.—Barkuda. The Tomato.

A native of Tropical America but becoming established in the island.

95. **Datura** Linn.

123. **D. fastuosa** Linn. F.B.I. iv, 242; Prain, Beng. Pl. ii, 751; Roxb. Fl. Ind. i, 561.

Loc.—Barkuda. Nos. 1257 and 1258.

"A very common plant on Barkuda exhibiting considerable variation in the colour of the flowers and stamens, both of which are often deeply tinged with purple." A variety with double flowers occurs occasionally.

Distrib.—Throughout India. In Malaya and Tropical Africa. In America said to be introduced.

124. **D. fastuosa** Linn. var. **alba.** (l.c. 243).

Loc. Barkuda. No. 1227.

"This form is particularly common in the dry season in which, however, the other is also found."

Distrib.—As in type.

XLIX. SCROPHULARIACEAE.

96. **Vandellia** Linn.

(*Lindernia All. in Eng. and Prantl. Pflanz.* iv, 3.)

125. **V. hirsuta** Benth. F.B.I. iv, 280; Prain, Beng. Pl. ii, 768.

Lindernia hirsuta Benth. Eng. and Prantl Pflanz. iv, 3, 79.

Loc.—Barkuda. No. 1221.

"In shade of bushes and of fig-trees."

Distrib.—Eastern and Southern India, Java, Borneo, Phillippine Islands and China.

126. **V. crustacea** Benth. F.B.I. iv, 279; Prain, Beng. Pl. ii, 768.

Lindernia crustacea Linn. Eng. and Prantl Pflanz. iv, 3, 80.

Torenia varians Roxb. Fl. Ind. iii, 96.

Loc.—Barkuda. Nos. 1209 and 1275.

No. 1209 growing in shade of bushes on stony ground. No. 1275 growing among rocks at edge of pond: both in rainy season.

Distrib.—Throughout India and Ceylon. Tropics of the old world, rare in the new, if not introduced.

97. **Bonnaya** Link and Otto.

(*Included in Ilysanthes Rafine in Eng. and Prantl Pflanz.* iv, 3.)

127. **B. brachiata** Link and Otto. F.B.I. iv, 284; Prain, Beng. Pl. ii, 770.

Gratiola serrata Roxb. Fl. Ind. i, 139.

Ilysanthes serrata Roxb. Eng. and Prantl Pflanz. iv, 3, 80.

Loc.—Barkuda. No. 1278.

"Among rocks at edge of pond in rainy season."

Distrib.—Throughout India, Java, China and Phillippine Islands.

LX. ACANTHACEAE.

98. **Rungia** Nees.

128. **R. pectinata** Nees. F.B.I. iv, 550; Prain, Beng. Pl. ii, 821.

Justicia pectinata Roxb. Fl. Ind. 132.

Loc.—Barkuda. No. 1362.

"Grows up in dry weather on dry ground in December to April."

Distrib.—Throughout India and Ceylon.

99. **Justicia** Linn.

129. **J. diffusa** Willd. var. **prostrata** Roxb. F.B.I. iv, 538.

J. procumbens Roxb. Fl. Ind. i, 132.

Loc.—Barkuda. Nos. 1208, 1211 and 1342.

A very variable variety connected by almost imperceptible gradations with the type.

"No. 1208 from the edge of the well is much more luxuriant, spreading and

rooting at the nodes. No. 1211 apparently eaten down by deer, and No. 1341 growing in low clumps on bare stony soil. Flowers at all seasons."

Distrib.—Common in the Deccan Peninsula and Ceylon, extending North to Nagpur, Kumaon and the Punjab Terai.

LI. RUBIACEAE.

100. **Oldenlandia** Linn.

130. **O. corymbosa** Linn. F.B.I. iii, 64; Prain, Beng. Pl. ii, 559.

Loc.—Barkuda. No. 1317.

"Grows at the edge of the pond. It is generally found as an abundant weed, but is scarce on Barkuda."

Distrib.—Throughout India and Ceylon. Also in Tropical E. Asia, Tropical Africa and America.

131. **O. Heynii** Br. F.B.I. iii, 65; Prain, Beng. Pl. i, 559.

O. herbacea Roxb. Fl. Ind. i, 424.

Loc.—Barkuda. Nos. 1217, 1270 and 1359.

No. 1217 found on stony ground in shade, very small. No. 1270 is reported to be very abundant in shade at the edge of paths and open spaces. Perhaps the most abundant herb that appears to be really indigenous in the Island.

Distrib.—Throughout India and Ceylon, Tropical Asia to Malay Islands.

132. **O. nudicaulis** Roth. F.B.I. iii, 70; Prain, Beng. Pl. i, 560.

Loc.—Barkuda. No. 1210.

"Generally on stony ground in the shade of bushes. A very small herb in Ficetum."

Distrib.—Throughout India not in Ceylon, Java.

101. **Randia** Linn.

133. **R. malabarica** Lamk. F.B.I. iii, 111.

Gardenia fragrans Koen. Roxb. Cor. Pl. t. 137.

Posoqueria fragrans Koen. Roxb. Fl. Ind. i. 717.

Loc.—Barkuda. Nos. 1301A, 1322.

"A shrub with white flowers and red berries, not uncommon. In full flower in latter part of June."

Distrib.—W. Peninsula from Canara southwards to Ceylon.

102. **Canthium** Linn.

(*Plectronia* Linn. in Eng. and Prantl.)

134. **C. parviflorum** Lamk. F.B.I. iii, 136.

C. parvifolium Roxb. Prain, Beng. Pl. i, 374; Roxb. Fl. Ind. i, 534.

Plectronia parvifolia Roxb. Eng. and Prantl Pflanz. iv, 4, 92.

Loc.—Barkuda. Nos. 1252, 1290 and 1297.

"A large bush or a small tree in mixed thickets, reduced to a small shrub in rocky places. A famine-food of the Uriyas. Leaves cooked with rice and eaten.

The deer also eat it. Very common on the island : flowers in September but also, more profusely, from the end of April to June."

Distrib.—W. Peninsula from Concan southward to Ceylon.

103. **Morinda** Linn.

135. **M. tinctoria** Roxb. F.B.I. iii, 156 ; Prain, Beng. Pl. i, 573 ; Roxb. Fl. Ind. i, 543 in part.

Loc.—Barkuda. No. 1255.

" Not uncommon as a large tree in thickets."

Distrib.—Throughout India also Malay Archipelago. Yields the well known dye "*dārū haridrā.*"

LII. COMPOSITAE.

104. **Vernonia** Schreb.

136. **V. cinerea.** Less. F.B.I. iii, 233.

V. cinerera Less. Prain, Beng. Pl. i, 590.

Serratula cinerera. Roxb. Fl. Ind. iii, 406.

Loc.—Barkuda. Nos. 1207, 1237, 1319, 1320, 1343.

A very variable plant, found in flower at all seasons. No. 1207 obtained from the edge of the well is the largest specimen of the collection and has much stouter and longer stems than the others. No. 1237 is the smallest. No. 1319, from a heap of stones under the shade of trees, has large leaves, No. 1320 is found in rock-wall of the pond and resembles 1207, No. 1343 was growing on bare stony soil.

Distrib.—Throughout India one of the commonest weeds. Also in Tropical Asia, Africa and Australia.

105. **Blumea** Dc.

137. **Blumea** sp.

Loc.—Barkuda. No. 1392.

Springing up in December.

106. **Eclipta** Linn.

138. **E. erecta** Linn. Mant. Duthie Fl. Gang. Pl. i, 468.

E. alba Hassk. F.B.I. iii, 304 ; Prain, Beng. Pl. i, 610.

E. prostrata Roxb. Fl. Ind. iii, 438.

Loc.—Barkuda. Nos. 1279, 1315, 1472 and 1479.

Nos. 1279 and 1315 grow at the edge of the pond among stones. No. 1472 is a depauperated plant, and No. 1479 which was found on the sandy foreshore on the south side of the Island.

Distrib.—Cosmopolitan in all warm countries.

107. **Tridax** Linn.

139. **T. procumbens** Linn. F.B.I. iii, 311 ; Prain, Beng. Pl. i, 618.

Loc.—Barkuda. No. 1318.

" On steps leading to the pond. A weak, straggling herb, by no means common, disappearing in dry season."

Distrib.—A weed of South America, now well established throughout India.

EXPLANATION OF PLATES.

Plate VII.

Upper figure.—Unbroken line of *Pongamia glabra* on the north side of the island. Note the plants of *Potamogeton pectinatus* left hanging on the lower branches by the retreating floods. Photo taken in October 1919, 1920.

Lower figure.—Line of *Pongamia glabra* on the south side of the island with a single tree of *Barringtonia acutangula* in the foreground. Note the remains of Potamogeton and algae left on the shore. Photo taken in October, 1919. *N.B.*—Owing to violent storms and unusually high water level the deposit of weed was scanty in 1919.

Plate VIII.

Upper figure.—Tree of *Salvadora persica* on rocks on the north side of the island with a large Nim behind it. Note the distorted trunk. Photo taken in October, 1919.

Lower figure.—Trees of *Crataeva religiosa* and *Azadiracthta indica* on the east side of the island, overwhelmed by lianas (*Derris scandens* and *Acacia intsia*, the latter in flower). The sand has been washed away from the roots of the Crataeva, which has fallen over and sent out upright branches from its prone trunk. The Acacia (the stem of which is marked with a X) has grown up from the sand directly over this tree, while the Derris extends from the neighbouring Nim. In the background various trees, with dead stems of *Jatropha gossypifolia* in front of them. Photo taken in October, 1919.

Plate IX.

Upper figure.—Another tree of *Salvadora persica* at the north-west corner of the island. Note the stems of *Cissus quadrangularis* festooned upon its branches. Photo taken in October, 1919.

Lower figure.—Large clump of Opuntia in the interior of the island, with bushes of *Glycosmis pentaphylla* interspersed with it and surrounded by a border of *Oldenlandia Heynii*. Photo taken in October, 1919.

Plate X.

Upper figure.—Large Tree-Euphorbia (*E. neriifolia*) with *Cissus quadrangularis* on its lower branches. Bushes of *Glycosmis pentaphylla* and young plants

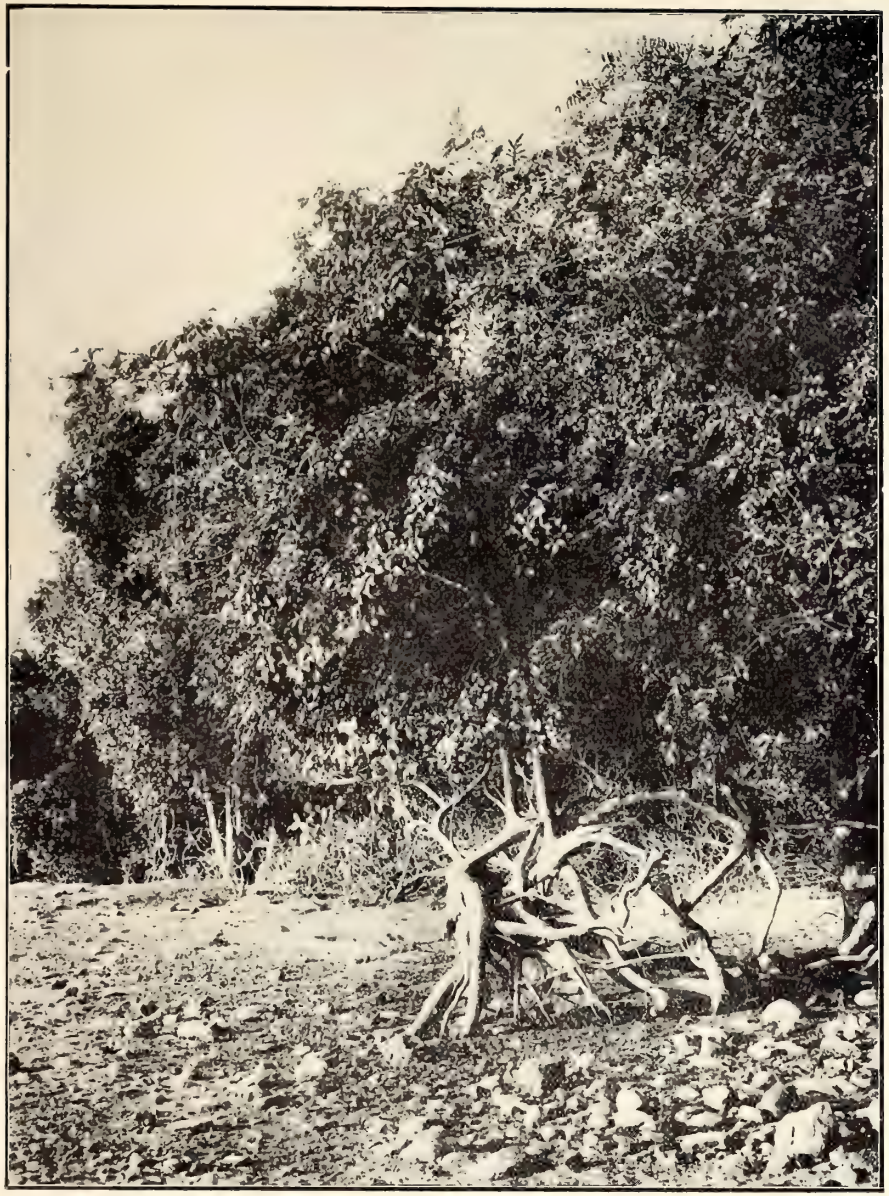
of Opuntia below it; *Dicrostachys cinerea* in the background and a dwarfed plant of *Canthium parviflorum* among the stones in front.

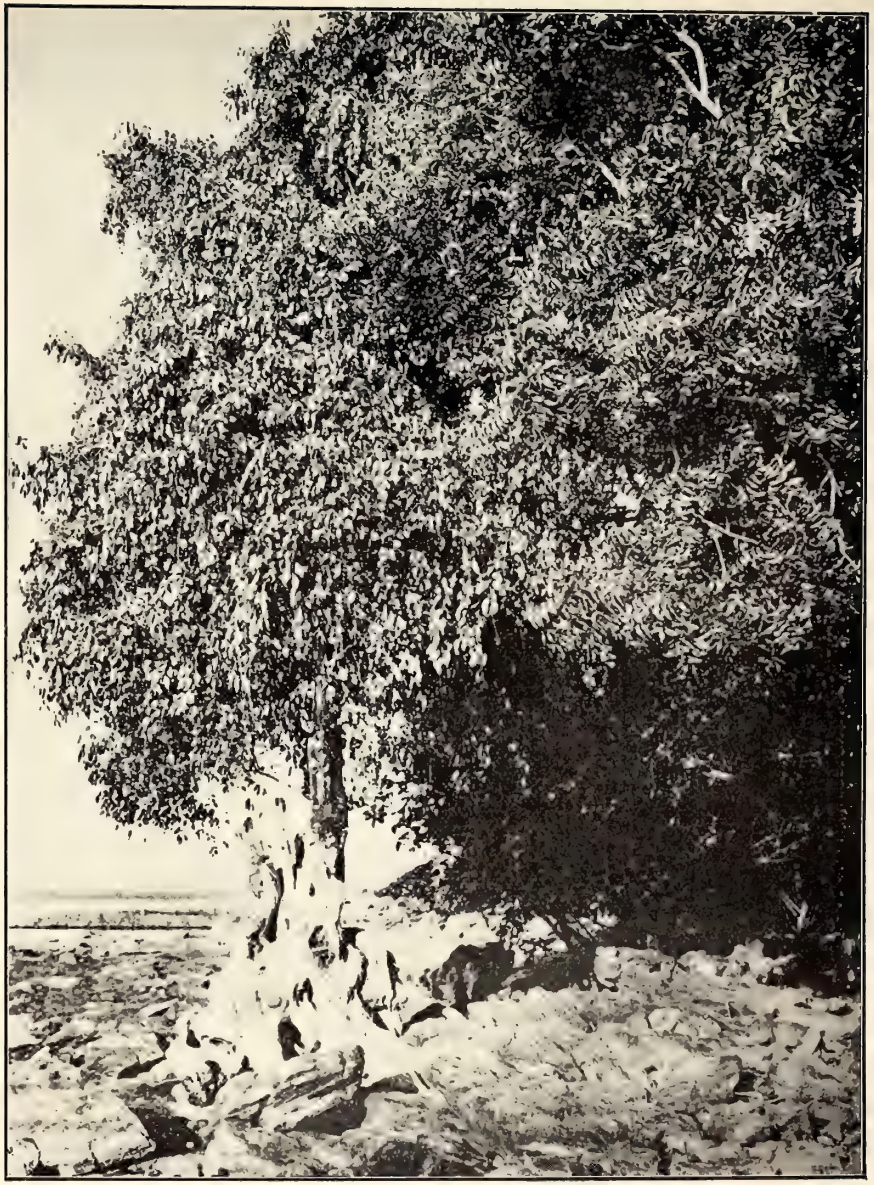
Lower figure.—Tall masses of *Euphorbia antiquorum* with *Cissus quadrangularis* trailing over them. A branch of *Ficus gibbosa* on the right; *F. bengalensis* and *Glycosmis pentaphylla* in the background. Photo taken in October, 1919.

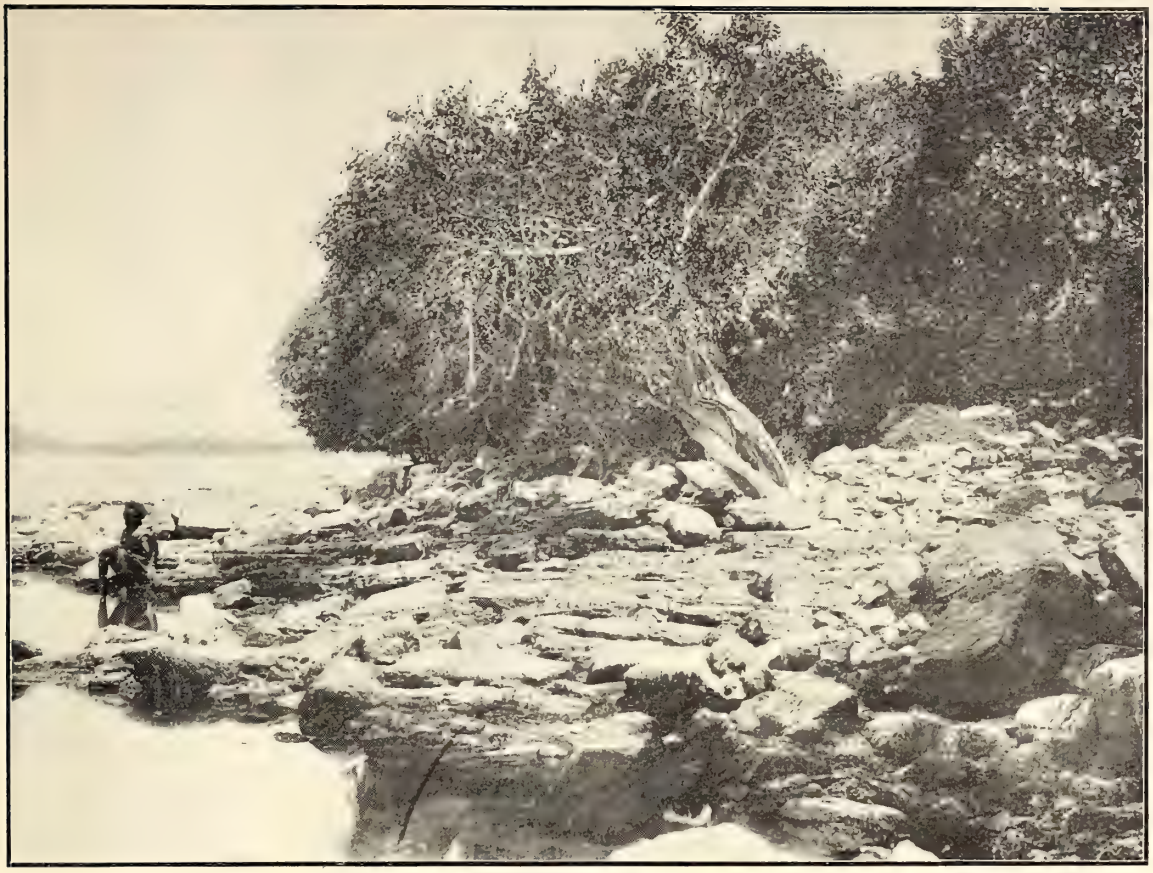
PLATE XI.

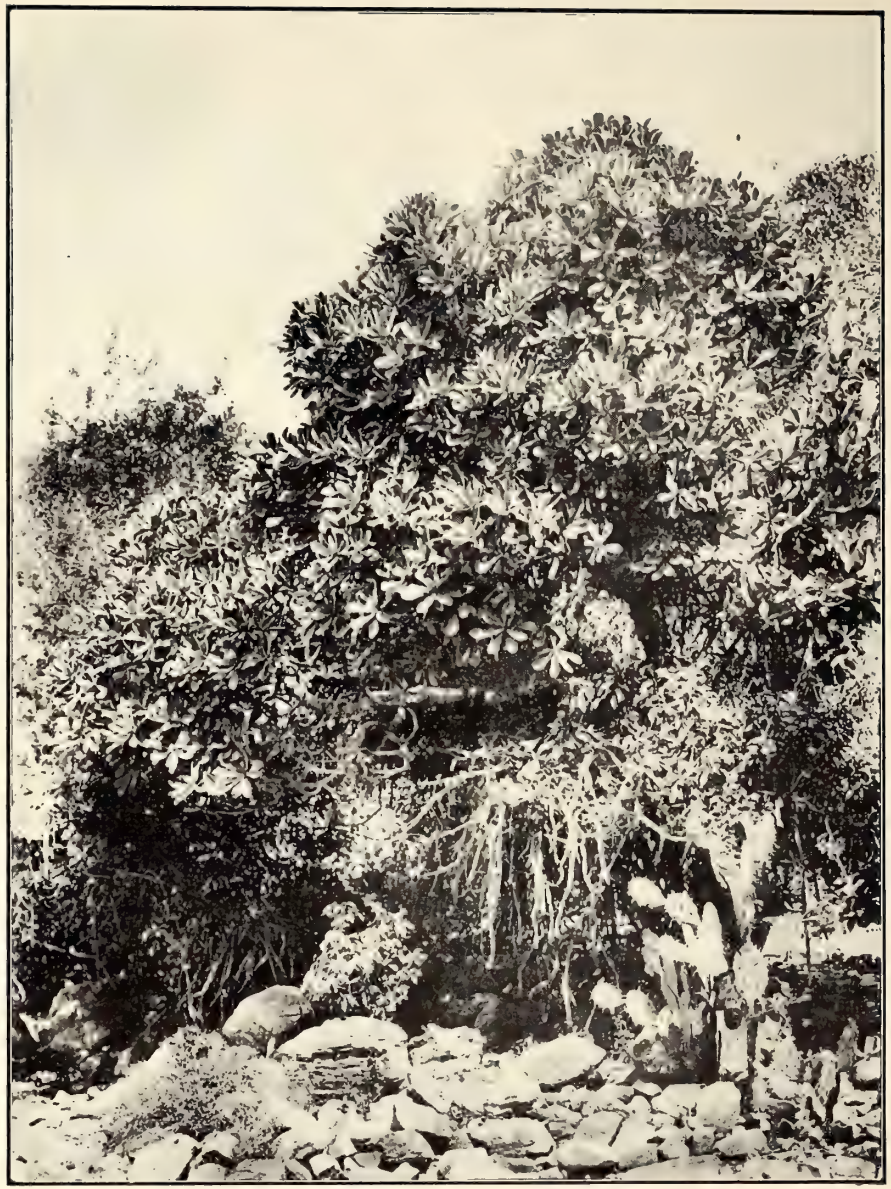
Upper figure.—Remains of a large tree of *Ficus bengalensis*, the living part of which is seen in the extreme background. On the left a dead secondary trunk with the remains of the branch from which it sprang; on the right a larger trunk occupied by a young tree of *Ficus gibbosa*. In the background on the left masses of *Euphorbia antiquorum* growing on the rock; in the foreground young plants of Opuntia diseased plants of *Jatropha gossypifolia* and seedlings of *Glycosmis pentaphylla*.

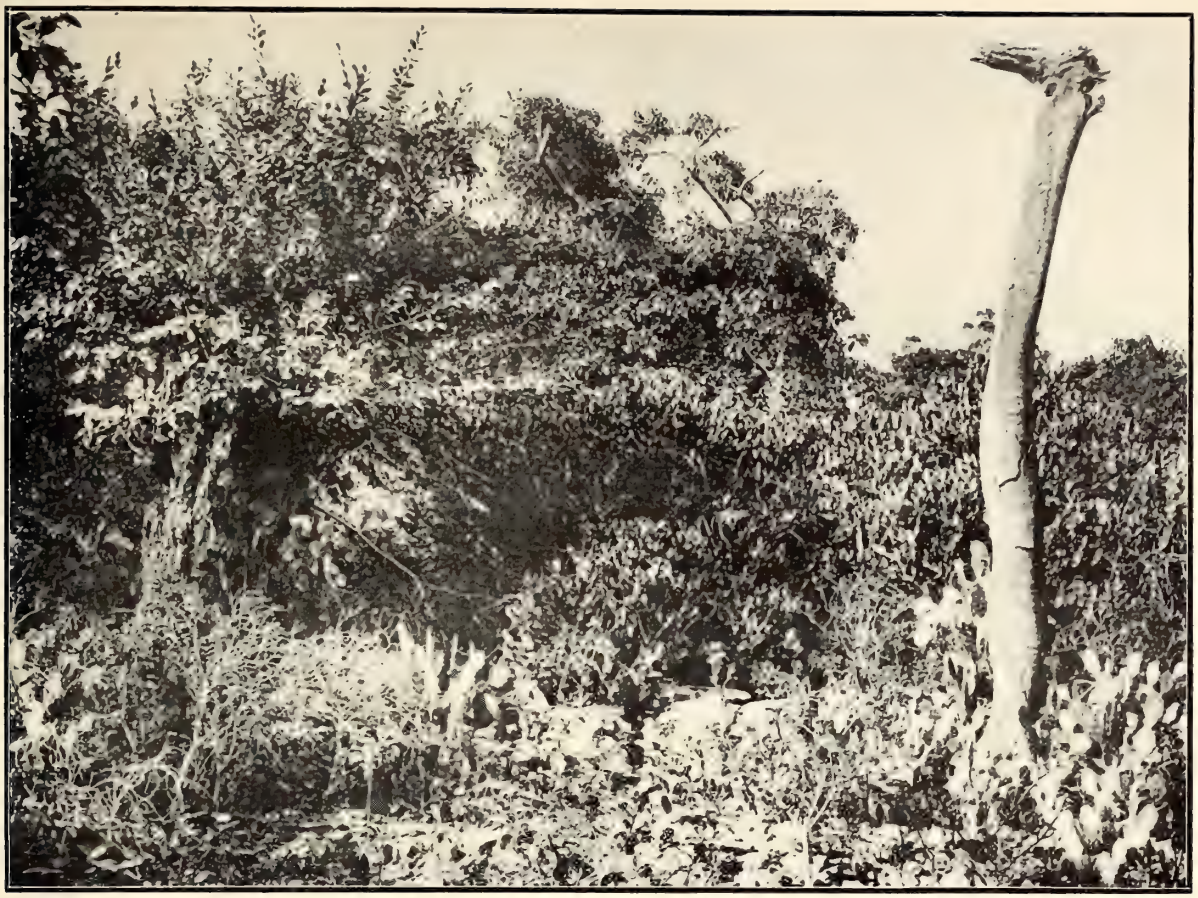
Lower figure.—Herbaceous thickets on cleared land surrounded by trees of *Ficus infectoria*, *F. retusa* and *F. bengalensis*. Beyond the shade of the trees the vegetation consists of *Tephrosia purpurea*, *Crotalaria striata* and *Datura fastuosa*; in their shade these plants are replaced by *Glycosmis pentaphylla* and seedlings of *Anona squamosa*. Note the precise line of division. Photo taken in October, 1919. *N.B.*—The growth of the Leguminosae was much less dense in 1920 than in 1919.











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VOCABULARY OF PECULIAR VERNACULAR BENGALI WORDS.

BY

F. E. PARGITER, M.A.

Indian Civil Service (retired), *Late Judge, High Court, Calcutta.*

Smithsonian Institution
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SIGNS.

* Means the word is in Haughton's Dictionary and in the Prakṛitibād Abhidhān.
† Means the word is in Haughton and not in the other.
‡ Means the word is in the Prakṛitibād Abhidhān and not in Haughton.
§ Means the word is in Prakṛitibodh Abhidhān.

ABBREVIATIONS

Corrup. } = corruption, corrupted.
crp. }
fr. = from.
gen. gener. = general, generally.
perh. = perhaps.
prob. = probably.
q.v. = quod vide, "which see."
Skt., = Sanskrit.

Conjunct. য with a dot under it as in ক্য } is pronounced distinctly as *y*; thus *kya*.
ज़ with a dot under it is pronounced *z*.

PREFACE.

During the whole of my service in Bengal it was my practice to note down every Bengali word that I did not know, and in this way the collection of words formed a large vocabulary at the end. The lists were then compared with Haughton's Bengali Dictionary, with the Prakṛitibād-abhidhān of Shyamacharan Karmakar and with the Prakṛitibodh-abhidhān of Aśutosh Deb. Words in my lists that were found in any of those three dictionaries were generally struck out, unless they had local meanings not mentioned there, and only those words were retained in the Vocabulary which did not appear in any of those dictionaries or which, if they did occur there, had meanings not noticed there. I had some thought of utilizing the Vocabulary for a Bengali Dictionary, but that did not prove to be feasible, and at length I offered it to the Asiatic Society. The Society has accepted it favourably and has now published it.

This Vocabulary will be useful for three purposes. First, it preserves vernacular words and meanings which are not generally known and might be lost in time. Secondly, it helps to trace the modifications of words and their meanings, for a word that is puzzling in one district may appear in another district in a form or with a meaning that elucidates it at once: thus, the expression ব্যাগ্‌গুন "everything" in Chittagong is strange, but becomes intelligible when compared with বেবাক্‌গুলিন "everything" in Dacca. Thirdly, it will aid the elucidation of the composite nature of the Bengali language: thus, in the phrase ছেলে পেলে "children" the second word is no doubt Dravidian, being the Telugu *pilla*, Kanarese *pilḷe*, Tamil *piḷḷai*, "child." Perhaps compare also Telugu *biḍḍa*, "child," and Tamil *viḍalai*, "male-child."

F. E. PARGITER,

Oxford, May, 1923. *Indian Civil Service (retired).*

VOCABULARY OF PECULIAR VERNACULAR BENGALI WORDS.

By F. E. Pargiter, M.A.

অ

অঅন (corrupt. of অখন), *adv.*, now, at the present time. *Chit.*

অকাট (from অ negative and কাটিতে, to cut), *adj.*, uncut, unfelled (as jungle); *so* primitive, virgin, thick-grown (as forest). *Raj.*

অকু
অকুর } =ওকু, *q.v.* *E. Beng.*

*অক্ত (Skt. past part. অক্ত, anointed), *adj.*, soft, flaccid, weak, sickly. *Mald.*

অখ্যান দিন, (perhaps from আগ+খান *s.*,) first day of a month. *Jess.*

অগ্যাঁ করিতে, *v.n.*, to go to stool. *Chit.*

*অগ্রদানী (Skt., receiving gifts first), *s.*, a low class of brahmans to whom presents are first made at a feast. *Jess.*

অজ্‌গবি (prob. from عجب wonderful), *adv.*, inexplicably, unaccountably; unexpectedly, suddenly. *Raj.* [The dict. gives with this meaning আজ্‌গইবী and আজ্‌গবী and the derivation আজ+عيب which seems doubtful.]

*অতি (Skt., exceedingly), *adv.*, exceedingly, very much; *e.g.* কামড়ায় অতি (the mosquitoes) bite terribly. *Bak.*

*অতিসার (Skt.), *s.*, diarrhœa; dysentery; cholera. *E. Beng.*

অত্তর (corrupt. of Skt. একত্র), *adv.*, together, in one place. *Chit.*

অত্তে=উত্তে, *q.v.*, *Chit.*

অনন্ত (*অনন্ত, endless), *s.*, a kind of armlet. 24-*Pargs.* and *gen.*

অনাসে (*vulg.* for অনায়াসে *loc.*, without effort), *adv.*, easily. *Hug.*

*অন্তর, *s.*, interval; distance; *e.g.* অন্তরে, *loc.*, at a distance.

অপত্তনীয়া (from অ negative and পত্তন a settlement), *adj.*, not leased out, unleased (applied to land).

অপরাণ (corrupt. of অপরাহ্ণ), *s.*, afternoon. *Jess.*

অবধৌতি (from Skt. অবধূ, to shake out), *s.*, a system of medicine which consists in the use of magical, drastic and dangerous drugs and remedies. *Raj.*

অবনাও (prob. অ negative and বনায়, affection), *s.*, dislike, revulsion from love. *Jess.*

*অভ্যাস, *s.*, exercise, practice; habit, course of conduct, *Raj.* Accustoming babies to bear the heat of the sun by laying them out in the sun. 24-*Pargs.*

অমন্ত, *adv.*, off and on, occasionally. *Mald.*

অর্ণী (অরণ্য through *অর্ণা ?), *s.*, wild buffalo. *Chit.*

*অর্শিতে, *v.n.*, to light upon, fall upon, accrue. *Bak.*

অলগ্নী (from অ negative and লগ্ন, applied, attached), *adj.*, not leased out, unleased, unsettled (applied to land).

*অলাহেদা
অলাএদা
অলাদা
} (from علیحدہ separate), *adv.*, separate, apart.

অশুজ় (from অ + শুচি, impurity), *s.*, the prohibition arising from an act entailing impurity, taboo. *E.g.*, a person may not marry on a day on which a relative has given birth to a child, and to do so is অশুজ়ে করিতে. *Dac.*

অশোজ = অশুজ়. *Raj.*

অশোজ় = অশুজ়. *Dac.*

অসলি (from اصل origin), *adj.*, original, pristine; applied to riverine lands which have never been diluviated within the knowledge of man, as opposed to চরা *q.v.* *Raj.*

অস্ত্র (corrupt. of আস্তার, spreading out?), *s.*, plastering. *Mald.*

*অস্থান (from অ negative and স্থান, a place), *s.*, the private parts (especially the female); back parts.

আ

আ, the letter *ā*. It is however very commonly pronounced (and written) এ *e* in Central Beng., especially if ই or এ occurs in the following syllable; e.g. *jele* for জালিয়া, a fisherman; *mere* for মারে, he beats; *jeni* for জানি, I know; থেকে *theke* for থাকিয়া, from;

In the termination -লাম of the past tense of verbs, the আ is commonly pronounced *u* in Cent. Beng., *e.g. gelum* for গেলাম, I went; *paṛilum* for পড়িলাম, I fell; *mepilum* (both changes), for মাপিলাম, I measured.

আ (Skt. অ negative), a negative prefix, used in forming words, *e.g.* আকাল (a bad period), a time of famine, *Bog.* আকাটা, *q.v.*, *Jess.* আকাঠা, *q.v.*, *Raj.* আগাছা, *q.v.*, *Hug.* আপথ, a place where there is no proper path, *24-Pargs.*

আইল (for আলি), *s.*, ridge of earth dividing fields. *E. Beng.*

আইল্‌ষা = আলিষা, *q.v.* *Mald.*

আউগে (corrupt. of আগে), *prep.* and *adv.*, before, in front of. *Chit.*

আউজানা, *adj.*, closed but not fastened (as a door). *Jess.*

আউড় (deriv. unknown), *s.*, fodder for cattle. *Raj.*

আউড় = আড়, q.v. *Chit.*

আউড়া (prob. from *আড়, across), *s.*, trees or branches stuck fast in water, snag. *Pub.*

আউড়ি (= আড়ি), a large paddy basket. *Raj.*

আউন (corrupt. of আগুন), *s.*, fire. *Chit.*

*আউরৎ (عورت a woman), *s.*, a title applied to married women. *Raj.*

আউলা = ওয়ালা, the suffix forming nouns of agency. *Jess.*

আউলা, with ঘর, a kitchen. *Chit.*

আউলি, *s.*, a small gola or granary (= ডোল). *Jess.*

*আউশ
*আউস
} (Skt. আশু), *s.* (with or without ধান), the āus or early rice (paddy) which is reaped about Sept.-Octr.; but in *Chit.* a quick-growing rice which may be grown in the autumn, cold season or spring according to the condition of the land.

আঁও বাঁও (onomatop.?), *s.*, inarticulate noise, meaningless sound. *Raj.*

আওঁর (*perh.* আওরিতে, to ooze, trickle), *s.*, a small water-way (in an embankment) (=চুঙ্গা). *Chit.*

আওরা (Pers. اوارہ scattered), *adj.*, unclaimed (as property, waifs and strays). *Chit.*

আঁই (*corrup. of* আমি), *pron.*, I. *Chit.*

আঁগর (Eng. auger), *s.*, an auger. *24-Pargs.*

আঁচ, *s.*, a guess. *Hug.*

আঁচড়, *s.*, furrow. *Rang.*

আঁচোল (*আঁচ্‌লা), *s.*, the loose upper part of a woman's śāṛī. *24-Pargs.*

*আঁচ্‌লা, *s.*, the edge or hem of a garment, *dict.* A fringe, broidered fringe. *Pub.*

আঁজা=আজা, *q.v.* *Tip.*

আঁড়=রাঁড়. *24-Pargs.*

আঁড় (আড়, *q.v.*), *s.*, a bamboo rail (used for hanging things on in a house). *Jess.*

আঁড়া (=আড়া), *s.*, a trench. *Jess.*

আঁড়ি, *s.*, part of a bamboo with one node, forming a kind of cup. *Jess.*

আঁড়িয়া (Skt. অণ্ড, a testicle; comp. Hindi আণ্ডু, having large testicles), *s.*, a bull.

আঁতুড়, (perhaps অন্তঃপুর) *s.*, lying-in room. *24-Pargs.* see আতুর

আঁরা (corrup. of আমরা), *pron.*, we. *Chit.*

আঁস্‌লা (?) (see আঁচ্‌লা), *s.*, a bairagi's alms-bag. *Jess.*

আকচা আকচি (আখেজ ?), *s.*, mutual enmity. *24-Pargs.*

আকড়া, *adj.*, costly, dear, expensive. *Hug.*

আক্‌পাছ (from আগে পাছে), *adv.*, before or behind. *Jess.*

*আকা (said in the dict., to be corrupt. of অন্তিকা from Skt. অন্তী and অন্তিকা, a fire-place; but see আকাত), *s.*, a hole or small pit dug in the ground and used as a fire-place for cooking. *Raj.*

*আকাটা (from আ negative and কাটা, cut), *adj.*, uncut, unreaped. *Jess.*

আকাঠা (from আ negative and কাঠ, wood), *adj.*, not having good wood, not yielding valuable timber (as mango trees, bábul trees, etc.). *Raj.*

আকাত (see আকা), *s.*, mud hearth (=উন্নান). *Hug.*

*আকাল (আ negative and কাল, time), *s.*, time of famine. *Bog.*

আকিরী, *s.*, kind of ear-ring. *Jess.*

আক্‌চাইতে (from اخذ seizing, intercepting ?), *v.a.*, to go in front of a person and stop him (when running away), to intercept. *Jess.* see আগড়ি ছান্দিতে.

আক্তা (corrupt. of اخته), *adj.*, castrated, gelt.

আক্‌সাক্‌সি (corrupt. of আখজ), *s.*, hostility, ill-feeling. *Dac.*

আখজ (from اخذ)=আখেজ which is more common. *E. Beng.*

আখাতলি, *s.*, arm-pit. *Dac.*

আখারি (from আখু or less properly আকু, sugar-cane), *s.*, sugar-cane field. *Bardh*

আখিরা (connected no doubt with আখড়া, an assembly or place for singing, dancing etc.), *s.*, a place where bairágis live and perform their devotions, etc., *Dac.* A hermitage. *Chit.*

*আখেজ (or আখজ, from اخذ), *s.*, hostility, enmity, ill-feeling, animosity. *E.* and *C. Beng.*

আখেরা (see আখিরা), *s.*, Hindu temple. *Chit.*

আগইতে = আগুইতে. *E. Beng.*

আগ কোলে (from আগ, front and কোল, flank, side), *s.*, front, prow (of a boat). *Raj.*

আগ ছান্দিতে = আগড়ি ছান্দিতে. *Raj.*

আগড় (for আগোড়, from আ and গুড্, to guard), *s.*, a jhamp-door made of hogla leaves, *C. Beng.* The place where a jhamp-door is fastened to the door-post. *Pub.*

আগড়ি ছান্দিতে, *v.a.*, to go in front of a person in order to stop him, to intercept. *Raj.*

আগমস্য (corrupt. of 2nd Fut. particip. আগমিষ্যৎ, which shall come ?), *adv.*, in future. *Dac.*

*আগা (from অগ্র, foremost, anterior), *s.*, the extremity or top or point (of anything); the prow (of a boat); source, beginning (of a river). *Sundbn., Chit.*

আগা (*Turk.* آغا prob.), *s.*, an Afghan, a Kabuli. *24-Pargs.*

আগাইল (for আগালি; from আগা, q.v.), *s.*, the top portion of a bamboo. *Raj.* See আগালিয়া.

আগাছা (আ negative and গাছ, a tree; i.e. a worthless tree), *s.*, plants or trees that spring up of themselves, weeds. *Hug.*

আগাত (from আগা, *q.v.*), *s.*, prow (of a boat); top (of a tree). *Chit.*

আগাম (from আগা, *q.v.*), *s.*, prow (of a boat), *E. Beng.* *Adv.*, in front, ahead. *How.*

আগারি (from আগা, *q.v.*), *s.*, end, extremity. *E. Beng.*

*আগালিয়া (from আগা, *q.v.*; see also আগাইল), *s.*, upper part of a bamboo stem. *Raj.*

*আগু (from অগ্র, foremost, anterior), *adv.*, forward, before, ahead, first; very commonly used as a cry for help, *E. Beng.*; আগু ছিলাম, I remonstrated, protested, forbade. *Dac.* Also আগো.

আগুইতে (from আগু), *v.n.*, to go forward, advance; to come forward, approach; to advance, progress; to prosper, succeed. *E. Beng.* and *Raj.*

*আগুন (corrupt. of অগ্নি), *s.*, fire: আগুন পওয়াইতে, to get warmth from a fire. *Jess.*

আগো, *adj.*, unploughed.

আগ্‌চালি (from আগ, the front part and চাল, thatched roof), *s.*, verandah (of a kutcha house). *Raj.*

আগ্দ (from عقد), *s.*, the 'aqd ceremony in a wedding. *Chit.*

আগ্না (from অগ্র, foremost, anterior ?), *s.*, the cloth that covers a woman's breast. *Jess.*

আগ্না, corrupt. of আল্‌গা, loose. *Jess.*

আচরাদা, *s.*, straw-stack.

আচাড়, *s.*, handle (of a knife, sickle or any other instrument).

আচাড়ি (from আচাড়), *s.*, handle (of a sickle, etc). *Jess.*

আচু (corrupt. of আঁচড়, a fracture, scratch ?), *s.*, scratch. *Chit.*

আচ্‌কাইতে = আক্‌চাইতে. *Jess.*

আছড়, *s.*, firm land, solid ground (distinguished from made-up soil such as a filled-up tank). *24-Pargs.*

আছড়া (from আ prep. and ছড়াইতে, to free, scatter ?), *s.*, a harrow. *Jess.*

আছড়াইতে (from আ prep. and ছড়াইতে, to set free ?), *v.a.*, to lift (a person) up and then throw (him) down. *Jess.*

আছাড় (connected with the proceeding), *s.*, lifting up and then throwing down. *Jess.*

আছাড়, *s.*, a covert, hiding-place. *Sundbn.*

আছার, *adj.*, (land) with paddy-stubble remaining on it. *Raj.*

আছিল্=ছিল, he was. *Chit.*

আছিলাম=ছিলাম, I was. *Chit.*

*আজ কাল, *adv.*, to-day and yesterday, lately, recently.

আজা, *s.*, clasping around (a person's body) with both arms. *Chit. It is pronounced* আঁজা *in Tip.*

আজাইতে, (*for* আবজাইতে *from* আবজিতে, to close, shut), *v.a.*, to shut, close (as a door). *Tip.*

আজাইর, *s.*, a workman's leisure time after work is done. *Chit.*

আজান (*from* اذان), *s.*, the call to prayers (among Mohammedans). *Chit.*

আজারি (*from* আজ, to-day), *adv.*, to-day. *Hug.*

আজিয়া (আজ), *adv.*, to-day. *Chit.*

*আজ্ঞা (*pronounced short*), *s.*, a command, order. যে আজ্ঞা, *or shortly* আজ্ঞা, *is commonly used as an interjection signifying* obedience, compliance; *then extended to indicate* assent, respect, doubt, interrogation, etc.

আজ্ঞাদ, *corrupt. of* আন্দাজ. *E. Beng.*

আটক (from আটক, obstruction), *adj.*, excommunicated; shunned (by one's friends), 'cut.' *Raj.*

আটন, *s.*, boundary.

আট পহরী (from আঠ, eight and প্রহর, a watch of three hours; *lit.*, a man who is on duty all day and night), *s.*, a paik. *Pub.*

আটা আটি (prob. from আটা, any sticky substance), *adv.*, very close to, contiguously, adjacently. *Mald.*

আটালি (from আটা, any sticky substance, or connected with আটাল্, a tick), *s.*, a leech. *Bak.*

আটিয়া (prob. from আটা, any sticky substance), *adj.*, having remains of food, uncleaned after a meal (as a plate), greasy. *Jess.*

আঠ বেঁকি (from আঠ, eight and বেঁকি, a curve ?; but see আড়বেঁকি), *s.*, an anklet worn above the *mal* anklet, *Mald.* A girl's net-work-like anklet. *Jess.*

আড় (from *আড়, athwart, across), *s.*, a horizontal bamboo rail (for hanging things on), *Jess.* cp. আড়. Standing with the hands raised and the palms outwards (to prevent a person from coming against one). *Chit.*

আড়ওয়া, *adj.*, set with gems, jewelled. *24-P.*

আড় কোলা (from *আড়, across and *কোল, the bosom ?), *s.*, an embrace (?), *e.g.* আড় কোলায় করিয়া, holding (a person) up in one's arms. *Jess.*

*আড়গড়া (from *আড়, across and *গড়, fence, fortification), *s.*, a rough fence of stakes, *Chit.;* any place fenced in; a pound; a stable; a carriage-shed.

আড়চক্ষে (from *আড়, across and *চক্ষু, the eye), *adv.*, looking side-ways, in a peeping manner. *E. Beng.*

*আড়ৎ (from আড়া, a rail ?; so *lit.*, a railed-in spot ?), *s.*, a warehouse.

আড়বেঁকি (from *আড়, across and বেঁকি, a curve ? but see আঠ বেঁকি), *s.*, a silver anklet of a particular curved shape. *Raj.*

আড়া, *s.*, a trench, ditch. *Jess. Mald.* See আড়্ড়া.

আড়া, *s.*, small wage. *Chit.*

*আড়া (from আড়, athwart, across), *s.*, a cross-rafter (in a thatched roof), *gen.* A cross-bar in the frame of a bullock-cart, *Raj.* A partition, fence, *Dac.*

আড়া, *s.*, small embankment of a bāṛi. *Chit.* The side, bank (of a tank). *Howr.*

আড়া, *s.*, jungle, thicket. *Bog.*

আড়া আড়ি (from আড়, across), *adv.*, across, athwart, *gen.* Crossing directly (as a direct road). *Jess.*

আড়ি, *s.*, a large basket for storing paddy. *Raj.*

আড়িতে (from আড়, across ?), *v.a.*, to ward off, parry; to guard. *Mald.*

আড়ীয়া = আঁড়িয়া, *Jess.*

*আড্ডা, *s.*, term of duty, spell of work (as of a pilot between two places). *Raj.*

আড়্ড়া, *s.*, ditch, trench. *Raj.*

আণ্টা (from অণ্ড, an egg ?), *s.*, a ball of mud (used by children in play); a billiard ball, hence আণ্টা ঘর, a billiard room.

আণ্টি (from আণ্টু, the knee ?) গাছ (in grafting), the stem which carries the graft. *Hug.*

আতার, *s.*, furrow made by a plough. *Jess.*

আতরি কাতরি, (corrup. of আতুর কাতর) *s.*, convulsive movements, spasm. *Jess.*

আতাইতে (from হাত, the hand ?), *v.a.*, to feel with the hand. *Dac.*

আতার, *s.*, vagina, pudenda. *Bog.*

*আতুর (Skt. আতুর), *adj.*, sick; আতুর ঘর, a woman's lying-in chamber, confinement room. *Jess.*

আত্তর, *s.*, the throwing (of a missile), hurling (of a spear). *Sylh.*

আদআদি (corrupt. of عداوت, enmity), *s.*, enmity, strife; quarrel, dispute. *Cent. Beng.*

আদত (prob. from আদি, beginning; first, prior), *adj.*, real, genuine, true, *Raj.* Principal (as rent, excluding all cesses and exactions). *Jess.*; *Bak.*

আদাড়, *s.*, low jungle, scrub, under-wood. *Raj.*

আধি (from আধা, half), *s.*, the system of cultivating land by which the cultivator and his landlord get half the produce each. *N. Beng.*

আধিদার (from আধি + دار), *s.*, the cultivator in the *ādhi* system. *N. Beng.*

আধিয়ার = আধিদার. *Jalp.*

আনি বোলাক, *s.*, a *bolāk* (*q.v.*) without the pendants. *Chit.*

আন্‌ছাম, *s.*, dysentery. *Chit.*

আন্তাজ (= আন্দাজ), *adv.*, about, nearly, approximately. *Tip.*

*আন্দোলন, *s.*, general talk, rumour, gossip.

আপথা (আ negative and পথ, a path), *s.*, a place where there is no path.

*আপন, *pronoun., genit. case,* one's own; *used commonly as* (1) equivalent to সহোদর in describing brothers and sisters and (2) excluding cousins; e.g. আপন ভাই, one's own full brother.

আপোষ; আপোষ মিল হইতে, to be compromised, be settled amicably (as a law suit).

আবাদ (from آباد, cultivated), *s.*, cultivation of waste or forest land, *gen.*: the initial rent-free period in a lease for reclaiming jungle land, *Bak.* (especially by the *Mags*).

আবাদুয়া (from আ *prep.* and বাদ, speech), *adj.*, quarrelsome. *Chit.*

আবান গরু, *s.*, bullock. *Dac.*

আবাল, *s.*, a castrated ox, a bullock (=দামড়া). *Jess.*

আবু, *s.*, grandmother. *Mald.*

আবছায়া, *adv.*, indistinctly. *Jess.*

আব্‌জাইতে, *v.a.*, to shut, close (as a door). *Tip.*

আব্দা (corrupt. of আবাদ, *q.v.*), *s.*, the initial rent-free term in a lease for reclaiming jungle land. *Bak.*

আব্দাল, *adj.*, beyond one's sight, out of view; concealed (by something intervening), hiding from view.

*আম (Skt. আম্র), *s.*, mango. আম কাষ্ঠে উঠাইতে, to burn (a person). *Chit.*

আমকাষ, *s.*, the portion of the verandah (in front of the door of a mud-walled house) which is separated off by walls from the rest of the verandah on either side.

আমল (from عمل), *s.*, (1) action, practice, *e.g.* আমলে আনিতে, *v.a.*, to perform, carry out, accomplish. *E. Beng*; (2) administration, governance (*often with the jingle* টামল *added*).

আমাত (prob. from আ negative and মাতিতে, to speak), *s.*, silence. *Chit.*

আমান (from অমান্য, unworthy of regard), *s.* or *adj.*, disregarding, denying, e.g. আমান করিতে, to deny, contradict. *Mald.*

আমানত (from امانت), *s.*, a deposit. আমানত করিতে, to gather together, place together in a bundle. *Jess.*

আমিলা, *s.*, jute. *Mald.*

আয়াঁ (prob. corrupt. of আজ্ঞা, *q.v.*), *interj.* commonly used interrogatively, or during hesitation, or simply as an expletive. *Chit.*

আরঙ্গ, *s.*, market. *Rang.*

আর্চ্চা, *s.*, extension of time. *Chit.*

আর্দাশ, *s.*, certainty, precise knowledge. *Mald.*

আলঙ ঘর, *s.*, the constables' house at a thānā; the peons' room in a zamindari cutcherry. *Dac.*

আলঙ্গ=পালঙ্গ. *Mald.*

আলপ: আলপ করিতে, to lift up, raise up. *Bog.*

আলা (Hindi वाला), *affix signifying* possessing, e.g. টাকা কড়ি আলা, *adj.*, possessed of money, monied, a capitalist. *Raj.*

আলা আলি (from আলি, a ridge of earth), *adj.*, close to an āli, having the same āli, contiguous (as plots of land). *Mald.*

আলামত (from علامت, mark, sign), *s.*, trace, indication, *Pub.* The space included within specified boundaries. *Dac.*

আলা সল্লা (corrupt. of আলাপ সংলাপ?), *s.*, conversation, intimacy. *Chit.*

*আলি (Skt. আলি), *s.*, a ridge of earth dividing fields, *gen.* See আইল.

আলিয়ারা (from আলি, a ridge of earth), *s.*, a person who has the same boundary as another, the holder of contiguous land. *Mald.*

আলিষা (connected with আলিশিয়া, a cornice on the top of a house—*Dict.* and prob. from আলি, a line, a ridge), *s.*, a parapet around the roof of a house. *Mald.*

আল্‌গা (আ negative and লগিতে, to be in contact with), *adj.*, unconnected, separate, *gen.* Loose, crumbled (as earth), *Mald.* Unfastened, half-opened, ajar (as a door);

unenclosed, open, *e.g.* আল্‌গা ঘর, a shed without walls. Distinct, different; other, another. *E. Beng.*

আল্‌ড়ি, *s.*, a stout staff. *Bak.*

আল্‌না (see আঁড়), *s.*, a rail hung by a string at each end (used for hanging things on). *Raj.*; *24-Pargs.*

আল্লা (from اولي, better, best?), *adj.*, best, superior in quality (applied to land). *Sund.*

আল্লাদে (Skt. আহ্লাদ?), *s.*, a poor fellow against whom one cannot be severe, either because of his poverty or because he is dear to one (applied to raiyats, whose rents are in arrears, but against whom one does not wish to take full legal measures). *Bak.*

আশত (=*অশ্বত্থ) *s.*, the aśvattha or holy fig tree.

আশোক (from عاشق, a lover?), *s.*, a paramour. *Jess.*

*আশ্নাই (from Pers. آشنائي, friendship), *s.*, acquaintance, familiarity, *Diction.*; but *generally* an illicit intimacy between a man and woman, a liaison.

আষ্ট (from অষ্ট), *num.*, eight. *Chit.*

আসর (from عصر, the time of prayer before sunset), *s.*, the prayer before sunset (among Mohammedans). *Chit.*

আসলা, *s.*, the upper end of a sāri, that passes around a woman's breast and head. *Jess.* see আঁচোল and আঁচ্‌লা.

আস্তেন (Pers. آستين), *s.*, sleeve. *How.*

আস্নান (from আ prep. and স্নান, bathing), *s.*, bathing. *Mald.*

আহির, *s.*, a natural reservoir of water. *Hug.*

ই

ই, the letter *i*. But the termination ইয়া is commonly pronounced *e* in Cent. Beng., *e.g. mere for* মারিয়া having beaten; *jele for* জালিয়া, a fisherman;

ই, *pronoun*, this; ইঅর, his. *Chit.*

ইঁয়ত (*loc.* case of *pron.* এ), *adv.*, here, in this place. *Chit.*

ইকরে (connected with ইকড়া, a sort of reed or grass—*dict.*), *s.*, a kind of reed (used for making ṭaṭṭis). *Dac.*

ইখ্যান, *adv.*, hither. *Chit.*

ইজম (from اذن, permission?), *s.*, the consent given by the bride at a Mohammedan marriage. *E. Beng.*

ইজ্জত (from عزت, honour, respect), *s.*, honour, fair name, good repute. ইজ্জত মারিতে, to outrage (a woman's) modesty, to ravish, rape.

ইতান (from *pron.* এ), *pron.*, *nomin. plur.*, these things. *Dac.*

ইনা (from *pron.* এ), *pronom. adj.*, this. *Chit.*

ইন্দি (probably from ই, this and দিগে, direction), *adv.*, hither, in this direction. *Chit.*

ইবা (pron. base ই), *pron.*, this (person or thing), *Chit.* ইবা কতক, this much. *Chit.*

ইয়াঁ (from *pron.* এ), *adv.*, so, thus. *Chit.*

ইয়ান (from *pron.* এ), *pron.*, this (thing). *Chit.*

ইয়ান (corrupt. of এখানে?), *adv.*, here, in this place. *Chit.*

ইশ, *s.*, the shaft of a plough. *Chit.*

*ইস্কাতর (from French *escritoire*), *s.*, a small box. *Raj.*

ইস্ক্রুপ (*Eng.* screw), *s.*, a screw.

ইসী, *interj.*, expressing hesitation, or used when hesitating. *Jess.*

উ

উ, *pronoun*, that. উঅর, his. *Chit.*

উঅর = উপর, *prep.*, on, upon. *Chit.*

উআ, *particle* (= টা, টি), used with numerals and pronouns to denote things and with nouns to particularise, e.g. সাত উআ, seven things; ক উআ, how many (things); হে রাত উআ, that particular night. *Chit.* See গুআ.

উইঁয়ৎ, *adv.*, there, in that place. *Chit.*

উইল (Eng. will), *s.*, a will, a testament.

উইস্কি (pronounced *wiski*), *s.*, the portion of a thatched roof projecting beyond the walls, the eave. *Mald.*

উইস্কি (pronounced *wiski*; prob. connected with উস্কিতে, to stir up, excite), *s.*, hard breathing, difficult breathing. *Mald.*

উইস্কিতে (pronounced *wiskite*; from উইস্কি), *v.n.*, to breathe hard or with difficulty. *Mald.*

উকা (corrupt. of উল্কা, a torch), *s.*, a wisp of straw, a torch. *Mald.*

উকি (connected with اوک, sickness at the stomach, inclination to vomit), *s.*, vomiting. *Mald.* See উচিলি.

উকিল (from وكيل, an agent, representative), *s.* (1) an authorized agent, especially in legal matters; (2) one of the highest class (vakil) of legal practitioners; (3) the agent for the bride (?) in a Mohammedan marriage ceremony.

উকুল, *s.*, a louse. *Chit.*

উচিলি (connected with উকি, *q.v.*, and উচলিতে, to toss about), *s.*, vomiting. *Mald.*

উচিলাইতে (from উচিলি), *v.n.*, to vomit. *Mald.*

উচ্চী (corrupt. of ওষধি, a plant?), *s.*, a kind of vegetable. *E. Beng.* See উস্থী.

উজাইতে (from উজু, *q.v.*, with perhaps আসিতে, to come), *v.n.*, to approach direct, go straight towards. Its imperative উজাও, "come straight here!" is used as a cry for help. *E. Beng.*

উজান (Urdu اُجان, from *উজন), *adj.*, and *adv.*, up-stream, against the tide; opposed to ভাটি *q.v.*

উজাল (from উজ্জ্বল, blazing), *s.*, a torch made of a bundle of split bamboos. *Chit.*

উজু (prob. from Sansk. root উজ্, to make straight or ঋজু, straight), *adj.*, right in front; straight, up-right. *E. Beng.*

উঞ্চা (from Skt. উচ্চ; Hindi উंचा and ऊंचा), *adj.*, high, lofty.

উট্‌কাইতে (*caus.* of উট্‌কিতে which means the same; deriv. uncertain), *v.a.*, to seek, search for, hunt about for. *Raj.*

উঠি যাইতে (from উঠিতে, to rise up), *v.n.*, to stand out, to keep off (from the land or from another boat); opposed to চাপি রাখিতে, *q.v. nautical*: (2) to emigrate (with *ablat.*).

উডে, *adv.*, there, to that place. *Chit.*

উৎকাত (prob. for উৎখাত), *s.*, ejectment. *Pub.*

উত্তে (from وقت, time), *used in composition to denote time, e.g.* কোনুত্তে, when? *Chit.*

*উৎপাত (Skt.), *s.*, bother, trouble, annoyance, vexation. *Jess.*

উৎলা উৎলি, *s.*, struggling together. *Raj.*

উদন (prob. corrup. of উদাম, *q.v.*), *adj.*, open (as the lid of a box). *Raj.*

উদলা, *adj.*, stark naked. *Chit*

উদাম (prob. from Skr. উদ্দাম, unrestrained, free), *adj.*, having the lid open (as a box). *Dac.*

উদা, (prob. same as উদাম, *q.v.*), *adj.*, unenclosed, unfenced, open. *Chit.*

উনারে=উঁহাকে, *pron.*, him (honorific). *24-Pargs.*

উন্দি (prob. from ও, that and দিগে, direction), *adv.*, in that direction, thither. *Chit.*

উন্নান, *s.*, mud hearth (=আকাত, *q.v.*). *Hug.* Also উনান and উনুন.

উন্মিখ্যা, see মিখ্যা. *Chit.*

উন্মুই (উত্তরমুখী), *adv.*, facing northwards. *Chit.*

*উপপতি (from উপ and পতি), *s.*, a gallant, paramour; a prostitute's chief paramour.

*উপর, *adv.*, upon: উপর হইয়া পড়িতে, to fall face downwards. *C. Beng.*

উপরাইতে (from Skt. উপরি, upwards), *v.a.*, to pull up, root up. *Jess.*

*উপরি (Skt.), *adv.*, upon, above, in addition to: উপরি উপরি করিতে, to work for another, work for hire. *Bak.*

উবা, *pron.*, that (person or thing). *Chit.* উবা কতক, that much. *Chit.*

উবুর (prob. connected with উপর, see above: the dictionary gives উপুড় and উবুড় with this meaning), *adv.*, lying on one's breast, lying face downwards, prone.

উভুত (perhaps corrupt. of উপরিতে, *loc. case* from উপরি), *prep.*, on, upon (=উপর). *Dac.*

উমন (prob. corrup. of উপমান, knowledge as founded on comparison), *s.*, accurate knowledge, certainty. *Bak.*

*উমী (from أمّي, uneducated, illiterate), *adj.*, ignorant, doltish; উমী লোক, a country-fellow ignorant of the ways of towns and law-courts, a mere rustic, a country bumpkin.

উরণা (prob. from Skt. root ঊর্ণু, to cover; and also connected with উড়নী, a chaddar), *s.*, a woman's upper garment, the cloth that covers her breast. *Mald.*

উরা, *s.*, the thigh. *Sylh.*

উরা (perhaps corrup. of أسارا, a porch, a shed), *s.*, a buffalo-shed. *Chit.*

উর্কি, *s.*, a tattoo mark above the bridge of the nose (it is usually made in childhood, but the practice is dying out). *Jess.*

উর্ণি (see উরণা above), *s.*, a chaddar of fine transparent cloth. *Dac.*

উর্দি, *s.*, a short coat or jacket (like a police constable's jumper). *Mald.*

উর্দিয়া, *adj.*, wearing an *urdi*. *Mald.*

উর্সা (prob. corrup. of أسارا, a porch), *s.*, verandah. *24-Pargs.*

উল, *s.*, the front eave (of a house). *24-Pargs.*

উলা, *s.*, a downward slope, declivity, decline. *24-Pargs.*

উলা (prob. corrup. of উলপ), *s.*, thatching grass. *Raj.*

উলিয়া (উলা), *adj.*, sloping downward. *24-Pargs.*

উলু, *s.*, white ant. *E. Beng.*

*উল্‌টিতে, *v.n.*, to be reversed; উল্‌টা দিন, the following day, next day. *Mald.*

উল্‌টাইতে (*caus.* of উল্‌টিতে), *v.a.*, to overturn, upset. *Chit.*

উস্থী (corrupt. of ওষধি, a plant?), *s.*, a kind of vegetable. *E. Beng.* See উচ্চী.

ঊ

ঊই, *s.*, a machān or raised place in a house for placing paddy-baskets. *Chit.*

ঊএ=ঊই. *Chit.*

ঊদ (corrup. of উদ্র and ঊদ্র, an otter), *s.*, an otter. *E. Beng.*

ঊফা, *adj.*, straight and upright (applied to a cow's horns). *Chit.*

ঊরত (*loc.* case, corrup. from ঊরু, the thigh), *adv.*, up to the thigh, as high as the thighs. *E. Beng.*

ঋ

ঋষি, *s.*, a low caste, partly Mohammedan but chiefly Hindu, which deals in hides, makes shoes, etc. *E. Beng.*

এ

এ, the letter *e*. At the beginning of certain words, such as এক, এত, এমন, etc., it has the sound of the last vowel in the word কন্যা (a daughter); this is especially the case in and around Calcutta.

এক আধ বার (*lit.*, one or half a time), once or so, very rarely. *Raj.*

এক আন্দাজ (এক and اندازہ), *adj.*, made at one throw, made as a whole, e.g. এক আন্দাজ জরিপ, a general measurement (of a large area) at once.

একখানে (এক and کھانا, to eat), *adv.*, joint in food, (living) in commensality. *Tip.*

এক লাগারি (এক and লাগারি, *q.v.*), *adv.*, continuously, consecutively. *Raj.*

একস্তর (corrupt. of একত্র), *adv.*, in one place, together.

একাই (from এক, one), *adj.*, adherent, touching, contiguous. *Raj.*

একিস্তর (corrup. of একত্র), *adv.*, in one place, together.

এগানা (from Pers. یگانہ, kindred), *s.*, a kinsman, an agnate relation. *Raj.*

এগুন (corrup. from আগ, the front), *adv.*, in front. *24-Pargs.*

এডা (pronounced ĕḍā; prob.=এটা, this), a particle used during hesitation. *Jess.*

*এড়া (from এড়িতে, to loosen, relinquish), *adj.* (1) untethered, free, roaming at pleasure; *Jess.*; (2) slightly open, ajar (as a door), *Raj.*; [(3) of thin make, of a single thickness (as matting), *Chit.* See এরা].

এড়াইতে (†এড়িতে), *v.a*, to let off, let go, set free, *e.g.* কেহ ঘুষ দিলে এড়ায়, if any one gives (him) a bribe, he lets him off. *Bak.*

এড়িতে (=আড়িতে, *q.v.*), *v.a.*, to ward off, etc. *Mald.*

এড়িতে, *v.a.*, to put, place, keep. *Chit.*

এডে, *adv.*, to this place, here. *Chit.*

এত্তিয়ার, *adv.*, now.

এত্তে (=এতে; prob. *loc. case* of এ, "in this"), *adv.*, with: e.g. তোমার এত্তে, with you. *Chit.*

এন্না, *numer.*, one (thing =একটা). *Bog.*

*এবার (এ and বার), *adv.*, this time; this season, this year; lately, recently. *Jess.*

এমনি (এমন+ই), *adv.*, just so, simply, in the state in which a thing is, *e.g.* তিনি এমনি গিয়াছেন, he has gone just as he was; তুমি নিশান দিয়া চিন কি এমনি চিন, do you recognize it by any sign or do you simply recognize it as it is?

এর (gen. of এ), *pron.*, of this. *Bak.* and *gen.*

এরা (এক?+রা), *adj.*, of a single thickness, of thin make (as matting). *Chit.* Cp. দোরা.

এল (elŏ), *adj.* (1) free, open, unconfined (as a door, etc.); এল বাড়ি, a bari unenclosed with walls or fence; (2) free, unrestrained, loose (as a woman's hair when unbound), e.g. এলোকেশী, having the hair flowing free, 24-*Pargs.*; (3) without settled purpose, random, fortuitous, e.g. এল পেল, at random, *How.*

এলো, *adv.*, so (=এমন). 24-*Pargs.*

ঐ

*ঐ, *pron.*, that, that very (one); that same, the same, ditto; that there, yon, yonder; that further (one); *e.g.* ঐ সন, the year before last year.

ও

*ও, *pron.*, that, yonder (the most distant of objects considered); ও বৎসর, the year before last.

ওটা (perhaps from ওঠা, *q.v.*), *s.*, the ground below the eaves of a house. *Jess.*

ওকু (from وُقُوع, an event, occurrence), *s.*, an event, occurrence, *especially* the commission of a crime. *E. Beng.* Also অকু.

ওগুআ, *numeral*, one (person or thing). *Chit.*

*ওজর (perhaps from عُذر excuse, apology), *s.*, awaiting, expectance, tarrying for. *Dac.*

*ওঝা, *s.*, a kabirāj, medical man. *Dac.*

ওটা=ওঠা. *Dac.*

ওঠা (from Skt. উত্ and স্থা), *s.*, earthen steps or stairs, especially at the entrance of a house. *Dac.*

ওড় (the dictionary gives ওর) *s.*, end, limit, extremity. *Mald.*

ওড়া (*past part.* of ওড়িতে), *adj.*, wrapped round, swathed. *Mald.*

ওড়িতে (Urdu اُوڑھنا and اُوڑنا, to cover one's self), *v.a.* to wrap around, swathe, envelop. *Mald.*

ওরা, *s.*, basket for collecting cow-dung (=পেড়ুয়া). *Chit.*

ওষাড় (the dictionary gives ওষার, width and ওসার, wide, width), *adj.*, wide, broad. *Jess.*

ওসরা (Urdu اُسارا, a porch), *s.*, a verandah. *Dac.*

ওস্তাগর (from اُستاد, a teacher and *termin.* گر?), *s.*, a head mason who superintends the building (of a house, etc). *Dac.*

ওহা ওহি (onomatop.?), *s.*, cry, noise, hubbub, row. *Jess.*

ক

ক (pronounced *kha* like the Arabic خ ; corrup. of কত), *pron.*, how many ? *Chit.*

কই (pronounced koï ; from Skt. *pron.* কঃ, who, which), *adv.*, where ?, in what place ? It is used to express strong and contemptuous negation, *e.g.* কই রাস্তা, where is there a road ? there is no road at all. *Chit.*

কএরা, *s.*, a clasp, fastening (in an ornament). *Raj.*

কচ, *s.*, a small pile or heap (of money). *Pub.*

কচা (see কঞ্চি), *s.*, a twig, small branch.

কচালি (prob. কচা), *adj.*, consisting of scrub, bushy (applied to the low jungle which springs up after forest has been cut down). *24-Pargs.*

কচি (see কঞ্চি), *s.*, small branch, twig, switch. *Chit.*

কচ্ছর, (from খচর) *s.*, a mule. *Chit.*

কছায়ন (prob. corrup. of قضية, a quarrel), *s.*, a quarrel, dispute. *Chit.*

কজিয়া (corrup. of কলীজা, the liver), *s.*, the liver. *Chit.*

*কঞ্চি (Skt. কঞ্চিকা, a bambo branch), *s.*, a small bamboo branch, bamboo twig, *gen.* A thin bamboo fence. *Hug.*

কটার, *s.*, a large kind of wild rat. *Bak.*

কটুয়া, *s.*, a small round box or case, *Jess.* A small metal box or casket. *Mald.*

কড়, *s.*, part, portion, e.g. খেতের পূর্ব কড়, the east portion of the field ; মাসের শেষ কড়ে, in the latter part of the month. *Mald.*

কড়াই (from কটাহ, a shallow iron boiler), *s.*, a low pot with a large mouth. *Chit.*

*কড়ি, *s.*, an ear-ring. *Raj.*

কণ্ঠি বদল (from কণ্ঠি, a necklace and بدل, exchange), *s.*, a sort of baiṣṇab marriage, performed by exchanging neck-garlands. *24-Pargs.*

*কত, *pron.*, how many ?; কত খন, কত খানি, or কত দূর, *adj.*, how much ?, of what quantity ? (applied to land). *Chit.*

কদ (قد, stature), *s.*, stature. *Dac.*

কদুআ (কত+উআ), *adj.*, how much ? *Chit.*

কনি, *s.*, a thump with the elbow, given downwards. *E. Beng.*

কন্নৎ, *adv.* (1) *interrog.*, whither ?; (2) *indefinite*, in some direction. *Chit.*

কপাটী (from কপাল+টি ?), *s.*, forehead. *Dac.*

*কপাল, *s.*, the forehead. কপাল পুড়িতে, *v.n.*, to be ruined. *Jess.*

কপুড়িয়া (from কাপড়, cloth), *s.*, a cloth-seller. *Mald.*

কবজ (Arab. قبض, a receipt), *s.*, receipts ; documents, title-deeds.

কয়ালী (from কয়াল كيال, a weighman), *s.*, a broker. *Dac.*

কমর পাটা, *s.*, a flexible silver waist-band. *How.*

করণ্য ঝলি, *s.*, a jhali made of upright split bamboos spread out and fastened to transverse strips of bamboo. *Chit.*

করা, *s.*, kind of silver bracelet.

করারা (from قرار, firmness, stability), *adj.*, firm, permanent, of long continuance (as riverine land which has never been diluviated). *Raj.*; *Mald.* But in some places in Maldah it has the opposite meaning "recently-formed, alluvial."

*করারী=করারা. *Raj.*; *Mald.*

করি, *s.*, kind of ear-pendant. *Raj.*

কর্গ্য, *adj.*, pressed out, expressed (?), *e.g.* কর্গ্য তেল, any oil expressed from seed. *Chit.*

*কর্ণফুল (কর্ণ, the ear and ফুল, a flower), *s.*, a large chased ear-stud (worn in a hole through the ear-lobe). *Raj.*

কর্দ্দা, *s.*, a log, block of wood. *Chit.*

কর্ষা (from Arab. قلبه, a plough?), *s.*, the lowest grade of raiyat, who actually tills the soil. *Mald.*; *24-Pargs.*

কর্ষা (from কর্ষিতে, to plough), *s.*, a cultivator, a raiyat; the lowest grade of raiyat, who actually tills the soil. *Bak.*; *Khul.*; *24-Pargs.*

*কল, *s.*, a machine; steam-engine, steam-works; কলের গাড়ি, a railway carriage. *Hug.* A lock (which is fixed inside a door). *Hug.*

কল (corrup. of কাল, time?), *s.*, time, occasion. *Mald.*

*কলম (from قلم, cuttings of trees), *s.*, a cutting (in horticulture), *gen.* A stem with the graft upon it. *Hug.*

কলা, *s.*, small earthenware vessel. *Chit.*

*কলিকা, *s.*, the top piece of a hukka where the fire is placed, *gen.* A hubble-bubble. *Jess.*

কলিজা (*কলেজা; Hind. কলেজা, the liver), *s.*, the heart. *Chit.*

কল্কা, (from কলিকা, a bud) *s.*, the mark ৬ commonly found as a pattern on cloth. *Pub.*

কল্যা (from Pers. کلّه, the head), *s.*, the head. *Chit.*

কসড় মসড় (from Pers. کشیدن, to draw), *s.*, mutual pulling; a struggle. *Mald.*

কহর্ত (from Pers. کوفت, grief?), *s.*, pain, suffering. *Mald.*

*কহা বলা, *s.*, a conversation, *gen.*; bandying words, an altercation. *Jess.*

কহানে (Urdu کہاں, where?), *adv.*, where?, in what place? *Jess.*

কাঅড় (=*কাপড়), cloth, clothes. *Chit.*

কাইঁ (perhaps corrup. of Arab. قدم), *s.*, a pace, foot-step. *Chit.*

কাইতিয়া, *s.*, small log of wood. *Dac.* See খাইটা.

কাইন্দ, *s.*, small natural embankment. *Chit.*

কাইম, *s.*, split bamboo; সোনার কাইম, a plain gold circular bracelet. *Chit.*

কাইম (Arab. قائم, fixed, durable), *adj.*, permanent, lasting; *gen.*: কাইম কর্ষা, a raiyat with heritable and transferable rights. *Khul.*

কাইমী (same as the foregoing), *adj.*, fixed, permanent, lasting; কাইমী পট্টা, a lease in perpetuity at a fixed rent. *Pub.*; কাইমী জোত, a raiyat's holding with the occupancy right and at a fixed rent. *Raj.*

কাইস্তে, *s.*, a sickle.

কাউড়, *s.*, fence, enclosure (vulg.). *Raj.*

কাওড়া (Urdu کواڑ; Beng. *কপাট), a door. *Mald.* See কেয়াড়.

কাঁকর (from *কক্ষ, the side?), *s.*, the edge, rim (as of a drum).

কাঁক্রি (connected with *কাঁকুড় and কাঁকুড়ী, a kind of cucumber), a kind of melon. *Mald.*

কাঁখি, *s.*, a mistress; a prostitute. *Dac.*

কাঁঠা, (from কণ্ঠ) *adj.*, contiguous, adjacent. *Mald.*

কঁড়ায়া, *s.*, a stick coated with cow-dung and used as fuel (=নোদা). *Raj.*

কাঁথা (from কন্থা which means the same), *s.*, a warm quilted-garment made of several (old) clothes stitched together.

কাক্ষ (from কক্ষ), *s.*, the side of the body, the loins. *Jess.*

কাখোই, *s.*, a worker in horn. *Dac.*

কাগনা (same as কাঙ্গন), *s.*, a bracelet, wristlet. *Chit.*

কাঙ্গন (from Skt. কঙ্কণ, a bracelet, wristlet), *s.*, a broad silver bracelet.

কাঙ্গনি (from কাঙ্গন), *s.*, a kind of bracelet. *Raj.* কাঙ্গনি খারু, a kind of bracelet.

কাঙ্গরি (from Skt. কঙ্কন, a comb), *s.*, comb-making. *Dac.*

কাঙ্গানা খারু (prob. from কাঙ্গন), *s.*, a silver bracelet. *Chit.*

কাচা (same as *খাঁচা, a cage), *s.*, a cage. *Dac.*

কাচা (same as Urdū کچار and کچیار from Skt. কচ্ছ, low moist land, marshy ground), *s.*, a depression or low spot in the ground, a hollow, *Raj.* A ditch, trench, drain. *Jess.* See কাছা.

কাচা (=*কাঁচা from Skt. কচর, dirty=bad), *adj.*, unripe, raw; immature, imperfect; poor in quality, of coarse make. কাচা জু (pronounced zū=যুবা ?), a mere boy. *Jess.*

কাচালি (=*কাঁচলি from Skt. কঞ্চুলিকা a boddice), *s.*, a kind of boddice worn by women. *Jess.*

কাচি (corrup. of *কাছী), *s.*, a thick rope, a cable.

কাচিয়া (corrup. of *কাচ্‌তিয়া, a sickle), *s.*, a sickle, reaping-hook. *Mald.*

কাছা (same as *কাছ, shore; from Skt. কচ্ছ margin of a river, lake, etc.), *s.*, edge, margin. *Chit.*

কাছা (same as কাচা, *q.v.*), *s.*, ditch. *Dac.*

কাছারি (Hindi কচহরী), *s.*, a court of justice; a revenue office; any business office, *espec. in the mufassil* a zamindar's office for collecting rents.

*কাছিম (from Skt. কচ্ছপ, a tortoise), *s.*, a tortoise. *Jess.*

*কাজ (*kāz*: corrup. of Skt. কার্য, what is to be done), *s.*, anything to be done; work, labour; business, duty. কাজে, *loc. case used as adv.*, in fact. কাজের কথা, a matter of importance, relevant matter. কোন কাজের কথা নয়, it is of no importance.

কাঞ্চি=কাণাচি. *Jess.*

কাটজোনাকি (from কষ্ট, difficult ? and জোনাক, *q.v.*), *adj.*, (a night) unlit by the moon but lit by the stars. *Raj.*

কাটতী (from কাটিতে, to cut, to stop one's wages), *s.*, deducting, deduction. *Chit.*

কাটমু (*fut.* of কাটিতে), I will cut. *Bak.*

কাটা (prob. from *কাঁটা and Skt. কণ্টক, a thorn), *s.*, a cane basket, *Raj.* It is used as a measure and also for feeding horses out of. *Jess.*

কাটা বাজু, *s.*, a string of silver beads tied round the upper arm as an armlet. *Raj.*

কাটানি (from কাটিতে, to cut), *s.*, one who reels silk off cocoons, a silk-reeler. *Cent. Beng.*

কাটি (from কাঁটা, a thorn), *s.*, a tooth (of a harrow); *Jess.* A small stick or rod, *Mald.* The stick (of a match). *Chit.*

*কাটিতে, *v.a.*, to cut. Used in various idiomatic ways, thus পাট কাটিতে, to twist jute into rope; *24-Pargs.*; কাঁদিয়া কাটিতে, to cry, weep aloud.

কাটী, *s.*, an embankment. *Chit.*

কাটীবন্দী (from কাটী and بزد, binding, constructing), *s.*, constructing an embankment. *Chit.*

কাটুয়া (from কাটিতে), *s*(?), cutting; *e.g.* ধান কাটুয়া গিয়াছে, he has gone to reap paddy. *Mald.*

কাটুয়া, *s.*, a tortoise. *Sylh.*

কাট্যা, *s.*, cane sandals (to protect the feet when walking over guñjā thatching grass stubble). *Chit.*

কাঠা, (from *কাঠ, wood), *adj.*, having good wood (as trees), yielding valuable timber. *Raj.*

কাঠাল (from *কাঠ, wood), *s.*, jungle. *Mald.*

কাড়=কাঅড়. *Chit.*

কাড়াইতে, *v.a.*, to plough (land). *Mid.*

কাড়াদা (from *কাড়া, a kind of drum), *s.*, a kind of drum. *Jess.*

কাড়ি (prob. from Skt. কাণ্ড, a stalk, stem), *s.*, paddy-stalks, paddy-straw. *Mald.*

কাড়িতে, *v.a.*, to tear, rend. *Sylh.*

কাড়িয়া, *s.*, a small pitcher. *Jess.*

কাড়ুল, *s.*, a heifer. *Chit.*

কাণাচ } *s.*, the rear of a house; *Jess.* The eave or edge of the thatch (at the back of
*কাণাচি } a house). *24-Pargs.*

কাণি (from Skt. কর্ণ, the ear), *s.*, a corner. *Raj.*

কাণি, *s.*, a square measure of land, 12 nals long and 10 broad (the nal=7½ hāts, and the hāt=18 inches), i.e. 1,687½ sq. yds. (rather more than a standard bigha). It is also used as a measure of length and then means 12 nals or 45 yds. *Chit.*; *Tip.*

কাণ্ড (Skt. কাণ্ড, portion of a work or of a book), *s.*, deed, action, matter, affair, transaction. *Raj.*; *Jess.*

কাণ্ডা (corrup. of Skt. স্কন্ধ, the shoulder?), *s.*, the bank of a khāl (a tidal stream). *Khul.*

কাণ্ডাকুন্দি (from কাণ্ডা, *q.v.* and ?), *s.*, uncultivable lands on the bank of a khāl. *Khul.*

কাণ্ডি (from Skt. কাণ্ড, a cluster), *s.*, a whole stalk-ful of plaintains. *Hug.*

কাৎ, *prep.*, for, on account of; in, among. *Chit.*; *Jess.*

কাতলা (from قتل, slaughter?), *s.*, a forked wooden frame used by Hindus for slaughtering buffaloes and goats. (The head is fixed in the fork and cut off with a sword). *Raj.*

কাতা=কাঁথা, *q.v.*

কাতা (from Skt. কৃত্, to cut), *s.*, a kind of dāo (=খাড়া). *Jess.*

কাতান, *s.*, a long dāo, *sometimes sacrificial.* *How.*

কাতার বন্দি (from *কাতার, a line and بند, binding, constructing), *adv.*, in a line, in a row.

*কাতারি, *s.*, a small flattish earthen pot with a wide mouth. *Mald.*

*কাদা (from Skt. কর্দ, mud, clay), *s.*, mud, mire. কাদা করিতে, to smooth down the clods after ploughing.

কানাল, *s.*, a hill-stream. *Chit.*

কান্তি, *s.*, the earthen floor of a house, the basement. *Raj.*

কান্দর, *s.*, an expanse of fields, a māṭh. *Jess.*

কান্ধা (=*কাঁধা, from Skt. স্কন্ধ, the shoulder), *s.*, a raised edge or rim, a bank.

কান্ধা (from the above), *adj.*, high, well-raised (applied to land). *Bak.*

কান্ধি (from Skt. স্কন্ধ, the shoulder), *s.*, the shoulder. *Jess.*

*কাপ (prob. from Skt. কল্প, manner of acting, practice), *s.*, pretence, feigning, shamming. *Jess.*

*কাপড়, cloth. কাপড় চোপড় (a jingle), clothes.

কাবার (prob. from قبا, a jacket, gown), *s.*, a chapkan. *Dac.*

কাবু, *adj.*, ill, sick, unwell. *Jess.*

*কাম (corrup. of Skt. কর্ম), *s.*, act, deed; affair, business, *gen.* Intercourse between a man and woman, cohabitation. *Dac.*

কামড়ি (কামড়, a bite), *s.*, colic. *Chit.*

কামরাণা, *s.*, a cocoon-shaped amulet-ornament. *Jess.*

কামলা, *s.*, a thatcher. *Dac.*

কামাইতে, *v.a.*, to get one's self shaved (by another). *Sylh.*

কামাত, *s.*, land kept by a landlord in his own possession and cultivation; a place of occasional residence near a person's lands. *Raj.; Mald.*

কামাতি (from কামাত), *adj.*, attached to a kámát; *s.*=কামাত. *Mald.*

কায়া (from Skt. কায, the body), *s.*, the penis. *Mald.*

কার, *s.*, a machān or platform in the middle of a house. *Dac.*

কারি (connected with কাড়িতে?), *adj.*, severe, grievous (applied to blows and wounds). *E. Beng.*

কারুল (corrup. of Urdu کلور, a heifer?), *s.*, a heifer. *Chit.*

কালা (from Skt. কাল), *adj.*, black, blue-black. Used idiomatically to express age and mature development; e.g. কালা গাটিয়া, *s.*, old grass. *Chit.* কালা জঙ্গল, dense high forest. *Sundarbans.*

কালিয়া (*কল্য), *adv.* (1) yesterday. *Chit.* (2) to-morrow. *Chit.*

†কাসন্দি, *s.*, pickle prepared from unripe mangoes. *24-Pargs.*

কাসিতে (from *কাস, cough), *v.n.*, to cough, clear the throat.

কাহি, *adj.*, thatched; having a roof of thatch. *Raj.* কাহি ঘর, an open thatched shed, *Dac.* A thatched hut. *Chit.*

*কাহিল (from Arab. كهل, languid, sick; and قايل, subdued), *adj.*, weak; weary, fatigued, exhausted, *gen.* Sick, unwell, *Jess.*; subdued, defeated. *Chit.*

কিঁয়ত (*loc.* case of pron. কি), *adv.*, in what place? where? *Chit.*

কিনারা, *s.*, discovery, clue. *Mald.*

কিয়া, *s.*, small metal box or casket. *Mald.*

কিয়াইতে (corrup. of কেঁকাইতে *q.v.*?), *v.n.*, to cry or moan with pain. *Jess.*

কিয়ারে, *adv.*, for what reason? why? *Tip.*

কির্ষাণ (corrup. of কৃষাণ), *s.*, a ploughman; a day-labourer. *Jess.*

কিলাই (prob. corrup. of কি লইয়া and کس لیے), *adv.*, for what reason? why? *Chit.*

কিল্‌কোণি, *s.*, elbow. *Chit.*

†কল্লে=কিলাই, *q.v.*; তুই কিল্লে ন আইয়, why did you not come? *Chit.*

*কিস্তি (Arab. قسط), *s.*, instalment, part-payment, *gen.*: time, turn, *e.g.* এক কিস্তি, once.

কীরা (prob. corrup. of Urdu كريا, a deed, a religious act, an oath, from Skt. ক্রিয়া), *s.*, an oath (administered to a person to bind him to do a certain thing); কীরা করিতে to take an oath. *Dac.*

কুঅক (prob. *onomatop., but perh. from* Skt. rt. কুজ্, to coo, call), *s.*, a call, the distance that a call can travel. *Sundbn.*

কুওয়া, *s.*, a cocoon (of the silkworm). *C. Beng.*

কুঁড়ি (see কুড়া), *s.*, the hen (of a fowl). *Chit.*

*কুকর্ম্ম (from Skt. কু, bad *and* কর্ম, action), *s.*, a bad deed, wrong action, improper act; *hence commonly* illicit sexual intercourse.

কুকার্য্য (from Skt. কু, bad *and* কার্য, what is to be done), *s.*=কুকর্ম্ম.

কুকি (a *Buna* word ?), *s.*, a female child, a girl. *24-Pargs.*

কুচা, *s.*, kind of pointed weapon. *Sylh.*

কুজি (from Skt. কুব্জ, crooked ?), *s.*, a kind of thorny shrub growing in marshy places. *Mald.*

কুজিকাটা (from কুজি, *and* *কাঁটা, a thorn), *s.*=কুজি. *Mald.*

কুঞ্চি (from Skt. কুঞ্চিকা, the branch of a bamboo), *s.*, a bamboo branch or twig (used for driving cattle). *Jess.*

কুঞ্জবাড়ি (from কুঞ্জ, an arbour and বাড়ী, a dwelling ?), *s.*, the place where the idols are kept between the Rath and Ulṭā Rath Jātrās. *Raj.*

কুট (kuṭa), *s.*, straw. *Jess.*

কুটা (=কুট), *s.*, straw. *Jess.*

কুটি, *s.*, an earthen receptacle in a house for holding grain. *Mald.*

*কুটিতে, *v.a.*, to pound, pulverize, *gen.* To husk (paddy) by pounding. *Chit.*

কুটুম (কুটুম্ব), *s.*, a relative, kinsman. *Chit.*

*কুটুম্বিতা (from *কুটুম্ব), *s.*, relationship, the belonging to a common family. *Raj.*, *24-Pargs.*

কুট্‌নামি (from Skt. কুট্টনী, a bawd, procuress), *s.*, seduction, intrigue. *Chit.*

কুড়া, *s.*, from কুকুড়া, the common fowl (whether wild or domesticated). *Chit.* See মুরগী.

কুড়াই (from *কুড়াইতে, to pick up), *s.*, a collection, gathering. *Chit.*

কুড়িয়া (=*কুড়ীয়া, from Skt. কুটি, কুটির and কুটীর, a hut), *s.*, a hut, shed; a hut for watching crops by night.

কুড়িয়া (prob. from কুড়িতে, to pick up, gather up), *s.*, a manger. *Chit.*

কুণা (কোণা), *adj.*, having a corner (?) *24-Pargs.*

কুণিয়া (কোণা), *adj.*, relating to a corner, angular. *24-Pargs.*

কুণ্ডি, *s.*, plough-handle. *Chit.*

কুতি, *s.*, the point or prong of a কুচা, *q.v.* *Sylh.*

কুদিতে (from *কুর্দ্দিতে, to leap), *v.n.*, to leap, bound; to hasten forward with anger. *Chit.* H. কূদনা.

কুন্দি (perhaps connected with কুদিতে), *adv.*, with force. *Jess.*

কুমি, *adj.*, many. *Bak.*

কুরিতে, *v.n.*, to be finished, used up, exhausted, consumed. *Raj.*

কুর্ফা (=কর্ফা, *q.v.*) a man who cultivates land under a karṣā raiyat. *Bak.*

কুর্ম্মাণি, *s.*, slaughter, killing (of cattle). *Pub.*

কুল, *s.*, a plum; কুল গাছ, a plum tree. *Jess.*

*কুলক, *adj.*, relating to a family; কুলক গো, (with Pers. گو, speaking), *s.*, a person who keeps village genealogies, a ghaṭak. *Raj.*

কুলি (connected with Pers. کلّہ, the head?), *s.*, the skull. The diction. gives খুলী.

কুশর, *s.*, sugar-cane. *Jess.*

কুশাইর, *s.*, sugar-cane. *Raj.*, *Chit.*

কুশেল, *s.*, sugar-cane. *Chit.*

কুশ্যার (=কশাইর), *s.*, sugar-cane. *Chit.*

কুষ্টি (=*কোষ্ঠী), *s.*, a written horoscope. *Chit.*

কূআ (perhaps=*কূপ, a well) *s.*, a small pond. *Chit.*

কূট প্রশ্ন, (from Skt. কূট, a trick, puzzle, and প্রশ্ন, a question), *s.*, examination of a party's witness by the adverse party, cross-examination.

কূত, *s.*, toll. *Dac.*

কৃষ্ণপক্ষী (from কৃষ্ণ, blue, and পক্ষী, a bird), *s.*, the blue jay; used facetiously by Hindus for "a fowl," when they eat it contrary to their strict rules. *Raj.*

কেঁকাইতে (connected with *কোঁকাইতে; prob. onomatop.) *v.n.*, to cry or moan in pain.

কেকাইতে (=কেঁকাইতে). *Dac.*

কেচা, *s.*, spear. *24-Pargs.*

কেটা (*pron.* কে with affix টা), *pron.* who? *Jess.* (where it is used generally instead of কে).

কেদার, *s.*, (1) a field, plot of ground; (2) used as a measure of distance. *Sylh.*

কেন্=কেন why? *Dac.*

কেন্দুআ (connected with Urdu تیندوا, a leopard?), *s.*, a leopard. *Jess.*; *Chit.*

কেয়াড় (Urdu کواڑ, and Beng. *কপাট), *s.*, a door. *Chit.* See কোঅড়.

কেয়ার=কেদার, *Sylh.*

কেরাইল (connected with Urdu کریلنا, to poke, to thrust?), *s.*, a pole-hook (for raking paddy). *Jess.*

কেরাট, *adv.*, obliquely, diagonally. *Sundbn.*

কেরেঙ্কাল, *s.*, quarrel, contention. *Chit.*

কেলি সাপটা, *s.*, clasping (one) around the body. *Jess.*

কোঅড় (corrup. of *কপাট), *s.*, a door. *Jess.* See কাওড়া.

কোআকাটা=কজিকাটা. *Mald.*

কোঁচ (connected with Hindi कोंचना, to thrust, pierce), *s.*, a sawing cut with a sharp instrument).

*কোঁচ, *s.*, a bundle of small iron-pointed spears about two feet long tied firmly together at the butt ends. It is thrown down into water with a kind of twist and the points spread out, so as to transfix fish, etc. *Jess.*

কোঁটা, *s.*, long slender and flexible bamboo. *Pab.* Cp. কোটা.

কোচা=কুচা. *Sylh.*

কোঞ্চি (corrup. of কঞ্চি), *s.*, a bamboo branch. *Dac.*

*কোটর, *s.*, the hollow of a tree, *gen.* A small wooden fancy box, a tiny box such as children play with. *Raj.*

কোটা (=*কৌট, a casket), *s.*, a small circular box. *Raj.*

কোটা, *adj.*, bound, tied. *Dac.*

কোটা (from Skt. root কুট, to bend, curve ?), *adj.*, turned inwards (as a cow's horns). *Chit.*

কোটা, *s.*, a long, slender and flexible bamboo. *Pab.*

কোটা (from কোটিতে, to grind), *s.*, a mill. ধান কোটা, a mill for grinding paddy (like an oil-mill). *Bak.*

কোটা (perhaps connected with *খোলা, a field), *s.*, a plot of ground, a field. *Chit.*

কোটাল (=*কটাল), *s.*, a spring-tide. *24-Pargs.*

কোটুয়া, *s.*, a kind of pot. *Jess.*

কোঠা (=কোটা), a plot of ground. *Chit.*

কোড্ডে (see কোণ্ডে), *adv.*, in what or which place ? where ? *Chit.*

কোণি, *s.*, a pond. *24-Pargs.*

কোণ্ডে (from কোন্+দিগে?), *adv.*, in what or which place ? where ? *Chit.*

কোত্তে (কোন্ উত্তে, *q.v.*), *adv.*, at what time ? when ? *Chit.*

কোথ (*কোথা), *adv.*, in what or which direction ? whither ? *Chit.* কোথ তুন, whence ? *Chit.*

কোনে (কোন্), *pronoun*, who ? *Chit.*

কোনে (কোন্), *adv.*, in what place ? where ? *Jess.*

কোন্দি (কোন্+দিগে), *adv.*, in which direction ? whither ? *Chit.*

*কোপ (corrup. of কোব), *s.*, a blow, stroke (with a sharp weapon).

কোব (from Pers. كوب, beating), *s.*, a blow, stroke (especially with a sharp weapon). *Jess. Chit.* Used figuratively, e.g.; কোব ধরিতে, to give the first stroke, to begin. *Chit.*

কোবাইতে (from কোব), *v.a.*, to cut, wound. *Chit.*

কোরে (prob. connected with কোল, the flank, side), *adv.*, at the side of, near. *Chit.*

*কোল, *s.*, the concave side (of anything); the flank, hip; the bosom, *gen.* Side. *Jess.* কোল চর (a *char* formed in a bend of a river ?), a small char. *Bak.*

কোলা (prob. from কোল), *s.*, an earthen jar, a pitcher; a very large earthen jar (for storing water; =জালা). *Jess.*

কোলা, *s.*, a parcel of land covered with jungle. *Bak.*

*কোশ (Skt. কৌম্ব; often wrongly written কোষ; it has the general meaning of a hollow receptacle), *s.*, the trunk of a tree hollowed out to form a boat, a dug-out, a boat. *Bak.* কোশ নৌকা (*lit.*, a cargo boat ?), a large boat bound and fastened with iron. *Chit.*

*কোষ, see কোশ.

কোষ কোষ, *s.*, a bitter sensation; কোষ কোষ লগে, there is a bitter taste. *Bak.*

কোষ্টা, *s.*, jute. *Bog.*

*কৌটা (prob.=কোটা), *s.*, a kind of pot. *Jess.*

*ক্রোড়, *s.*, the bosom, lap. ক্রোড় উইল, *s.*, a supplementary will, a codicil. *Raj.*

*ক্ষণ, *s.*, a moment; ক্ষণ এক and ক্ষণেক, *s.* and *adv.*, a moment, for a moment.
ক্ষাণি (corrup. of ক্ষণেক, *q.v.* ?), *adv.*, for a moment. *Dac.*
ক্ষিপ্ত (Skt.) (1) thrown, cast; (2) deranged in mind, insane.
ক্ষেতাল (Skt. ক্ষেত্র, a field), *s.*, the occupier of a field ?

খ

খআই (*verbal noun* from খাইতে, to eat), *s.*, a small oval plot of ground enclosed with a low bamboo fence, used as a manger for cattle, a manger. *Chit.*
খচি, *s.*, a small stake in a fence. *Chit.*
খটিতে, *v.n.*, to slip aside, slink away. *Chit.*
খটিয়া, *s.*, post of a fence. *Chit.*
*খড়, *s.*, coarse grass dried, hay; paddy-straw, straw, *gen.* *San* grass. *Jess.*
খড়া (perh. from খড় *above*), *s.*, basket. *24-Pargs.* See খোড়া.
খড়া (=*খাড়া), *adj.*, upright, erect. *Jess.*
খড়াইতে (from খড়া), *v.n.*, to stand upright, to stand still. *Jess.*
খড়ি (connected with খটিয়া), *s.*, a small stick, small rod. *Mald.*
খদ (=*খত), *s.*, a bond for money. *Jess.*
*খন্তা (from Skt. root খন্, to dig), *s.*, a spade, hoe, paddle, *Diction.*; but *generally* a staff with an oblong-shaped iron head (used for digging); the iron head itself. *Cent. and E. Beng.* See গরা.
*খান্ত=খন্তা. *Cent. and E. Beng.*
*খন্দ (prob. from Skt. খন্, to dig), *s.*, cultivation; crop. *C. Beng.*
খপা (from Pers. خفا, angry), *s.*, a mad hare-brained quarrelsome fellow. *Mald.*
খম (perhaps from Skt. খর্ম, virility), খম করিয়া, *adv.*, thorougly, fully, completely. *Mald.*
খর পোষ (Pers. خورد و پوش, food and raiment), *s.*, food and raiment, maintenance.
খরচ পত্র, *s.*, expenses.
খরাণি (from *খরাণ, overbaked, parched), *s.*, dry season of the year (Novr. to May). *Raj.*
*খর্চা (from Pers. خرچ, expenditure), *s.*, expenditure; costs of a law suit; anything paid by a raiyat in excess of his legal rent and cesses.
খর্চা (corrup. of খুজর, small, petty), *adv.*, in small quantities, by retail. *Jess.*
খলফ, *s.*, closely woven bamboo fencing (=খল্‌ফা). *Raj.*
খলা (Skt. খল, a threshing-floor but compare খুলি and খোলা), *s.*, a threshing-ground, threshing place, *E. Beng.* An open space in a bāṛi, an āṅginā, court-yard, *Raj.* The outer yard of a bāṛi, *Bog.* A place where dhobis wash clothes, *Dac.* Prepared ground *for growing seedlings.* *Chit.*
খলাট (from খলা), *s.*, an open space inside or on one side of a bāṛi, an āṅginā (=উঠান very nearly). *Jess.*
খলিয়ান (Hindi খলিয়ান and খলিহান; from Skt. খল; see খলা), *s.*, a threshing-ground, threshing-floor, *gen.* An open space outside the bāṛi, hence খলিয়ান বাড়ি, the outer bāṛi. *Mald.*

খল্‌তা (from Skt. খল), *s.*, a threshing-ground ; a piece of open ground in the outer part of a bāṛi. *Mald.*

*খল্‌পা, *s.*, an encasement (generally of silver) around the top of the body (খোল) and the bottom of the pipe (নল), of a hukka. *Jess.*

খল্‌ফা (=খলফ), *s.*, closely woven bamboo fencing. *Raj.*

খশুর (corrup. শ্বশুর), *s.*, a father-in-law. *Dac.*

খাই (from *খাইতে, to eat), *s.*, eating, feeding ; খাই ভুজ্য, *s.*, eating and feasting, the being on terms of dining together.

খাইটা (connected with খাটিয়া), *s.*, a log of wood ; a mattock.

খাইটিয়া (from খাইটা), *s.*, a large block of wood, a log. *Raj.*

খাইন, *s.*, subscription, contribution. *Chit.*

খাওয়াইয়া (from খাইতে to eat), *s.*, an eater, a person to be fed. *Chit.*

খাওলা (from খাইতে), *s.*, eating, feasting. *Chit.*

খাঁচিয়া, *s.*, the R. Karṇaphuli. *Chit.*

*খাঁড়ি (from Skt. খণ্ড a fissure, a chasm), *s.*, an inlet, firth, strait, *Diction.;* the channel of a river, *Chit.* ; a water-course, channel, *nullah.*

খাচি (see খেঁচা), *adj.*, newly born. *Mald.*

খাঞ্চা (Pers. خوانچه a small tray ?), *s.*, a large strong open-frame basket. *24-Pargs.*

খাটি, *s.*, a liaison (=আশ্নাই). *Dac.*

*খাটি (from খাট, small, *in Diction.*; but perhaps connected with *খাড়া upright and Hindi खड़ा upright, honest, all right), *adv.*, clean, explicit, *Diction.* ; but *generally* exactly, precisely, accurately.

*খাটিতে, *v.n.*, to work, labour; to operate, take effect; জোন খাটিতে, to work as a labourer. মিয়াদ খাটিতে, to undergo a term of imprisonment, *gen.*; খাটি কুটি, *verbal particip.* used as *adv.*, by labour, with exertion, with pains. খাটি কুটি খাইতে, to work as a labourer, *24-Pargs.* মুনিষ্য খাটিতে, to do manual labour, work as a labourer, *Raj.*

খাটিয়া (prob. corrup. from কাঠ, wood; compare খাটু), *s.*, a piece of wood used by goldsmiths for beating out metal. *Raj.*

খাটী, *s.*, a small enclosure made in a tank to catch fish in. *Chit.*

খাটু (prob. corrup. of *কষ্ট ; compare খাটিয়া), *adj.*, hard, difficult ; e.g. আমি খাটু শুনি, I am hard of hearing. *Raj.*

*খাড়া, *adj.*, erect, upright ; direct, exact (applied to direction), e.g. খাড়া উত্তর, due north, *gen.:* high, lofty, (=উঞ্চা), *Dac.*

খাড়া (perhaps corrup. of খড়্গ a scymitar), *s.*, a kind of dāo with which goats are sacrificed (=কাতা). *Jess.*

খাড়াই (from *খাড়া high), *s.*, height, altitude. *Mald.*

*খাড়ু (connected with Skt. खादि a bracelet ?), *s.*, a kind of bracelet ; an anklet. In some districts it means the former, in others (e.g. *Jess.*) the latter ; in *Chit.* it means both. Its shape varies in different districts.

*খাতা (perhaps from Arab. خطّ hand-writing ; a letter : and *খত, a writing, a letter, bond : compare *খাতক, a debtor), *s.*, an account-book, *gen:* an agreement, contract (e.g. to grow indigo for another person), *Jess.*

খাতি (from খাইতে, to eat), *s.*, food.

খাদ (from Skt. খাত excavated; a ditch; from root খন্, to dig), *s.*, any excavated place, a pit; a ditch.

খাদা, *s.*, a quantity of land, = 16 pākhis. *Maim.*

খাদুরা মাদুরা, *adj.*, rough, uneven, having elevations and depressions. *Jess.*

*খানা (from Skt. root খন্, to dig), *s.*, a pit, hole; pond, pool; a ditch, drain; a hollow place, a depression (in the ground).

খানি (from খাইতে, to eat), *s.*, eating; consuming, using (as water). *Chit.*

খান্তি (from Skt. root খন্, to dig; compare খন্তি), *s.*, an instrument for making a hole through an earthen floor (in house-breaking), *Chit.*; =*সিধকাটী.

খাপ (prob. from Skt. root খন্, to dig), *s.*, a hole or ditch containing water. *Jess.*

খাবাইতে (*causal* of খাইতে), *v.a.*, to feed, graze (cattle). *Chit.*

খাব্‌লা, *s.*, a small earthen pot. *Raj.*

*খাম, *s.*, sealing of a letter, *Diction;* an envelope (of a letter), *Raj.*

*খামখা (from Pers. بخواه خواه), *adv.*, nolens volens; unexpectedly, suddenly; without cause, for no reason; vaguely, on mere guess.

*খামার, *s.*, a threshing-floor, *Diction.*; a place where paddy is collected and threshed (hence খামার বাড়ি, a house where paddy is threshed and stored, *Hug.*); but *generally* land kept by an owner in his own possession and cultivation: in *E. Beng.* land which a raiyat cultivates at a distance from his home; and খামার বাড়ি (or ঘর) a hut near such land where a raiyat puts up during the tilling and reaping seasons.

খামি, *s.*, a kind of chain-buckle. *How.*

খারি (connected with *খারই; see খালই), *s.*, kind of fish-basket.

*খাল (prob. from *খাঁড়ি q.v.), *s.* (1) a channel, stream of water, *gen.*; (2) a creek or tidal water-course, *gen.*; (3) any stream or river, *Chit.*

খাল, *s.*, skin, hide (?). *Chit.*

খালই (connected with *খালুঈ; see খারি), *s.*, a fish-basket. *Pub.*

খাশিয়া, *s.*, a large tubular bracelet, sometimes fluted. *Raj.*; *Mald.*

খাসা (from Arab. خاصّ excellent), *adj.*, good, excellent, e.g. খাসা বিয়ার a good breeze. *Mald.*

খিলনী, *s.*, rough stitching, tacking together (as cloth, before sewing it properly). *Raj.*

খীল (=*খিল; Skt. খিল, uncultivated land), *adj.*, uncultivated, fallow. *Bak.*

খুঁড়ি (from *খুড়িতে, to dig), *s.*, a tank, pond. *Mald.*

*খুঁড়িতে, *v.a.*, to dig; excavate, hollow out. *Chit.*

খুটা, *s.*, kind of pot. *Jess.*

খুটা (=*খুঁটা), *s.*, a peg, tent-pin.

খুটি (=*খুঁটা), *s.*, a wooden post (of a house). *Jess.*; *Raj.*

খুট্টা (=*খোট্টা), *s.*, an up-country man.

খুতি (same as Hindi খুত্তী), *s.*, a small bag; a purse, *Jess.* খুতি ছালা, a bag of strong cloth, *Jess.*; a purse, *Dac.*

খুদা (Pers. خُدا), *s.*, God. খুদার কাছারি *liter.* God's court; *used as an adjuration*, in the presence of God, calling God to witness. *Jess.*

খুনি (from Pers. خُون murder), *s.*, a murdered body; a dead body, a corpse. *Mald.*

*খুন্তি, *s.*, a spade or paddle, *dict.*; a long flat spoon, *How.*

খুপিয়া: খুপিয়া রাস্তা, a private path. *Chit.*

খুরাকি (from Pers. خوراكي), *s.*, a daily allowance of food; a daily money allowance for food; a money allowance for incidental expenses (espec. for menials).

খরুট, *s.*, village. *How.*

খুর্দ (Pers. خُرد small coin); খুর্দ টাকা, small coin.

খুর্পি (=*খুর্পা), *s.*, a spud or flat trowel (for grubbing up grass).

*খুলাসা (from Arab. خلاص free, liberated), *adj.*, clear, serene (as a night without clouds). *Dac.*

খুলি (perhaps from খুলিতে, to open; but prob. also related to Skt. खल and খলা), *s.*, a flat open space outside a bāṛi, *Mald.*; the outer yard of a bāṛi, *Pub.*; the court-yard of a bāṛi (=āṅginā), *Rangp.*

খুস্‌খুস (prob. onamatop.), *s.*, the rustling sound of leaves or of reeds swaying about. *24-Pargs.*

খূনা (perhaps corrup. of *শূন্য, empty; compare খশুর *above*), *adj.*, empty, deserted, forsaken. *Dac.* (*women's speech*).

খেইতে (prob. corrup. of ক্ষেপিতে, to throw; to row), *v.n.*, to row, to paddle. *E. Beng.*

খেউরি (perhaps corrup. from Skt. क्षुर a razor), *s.*, shaving, paring nails, etc.; the business of a barber.

খেওয়া (from খেইতে, to row), *s.*, the act of rowing; the business of ferrying. *E. Beng.*; hence খেওয়া ঘাট, a ferry ghāṭ, a ferry; খেওয়া নৌকা, a ferry boat.

খেঁচা (see খাচি), *adj.*, newly born. *Mald.*

খেটে=খাইটিয়া. *Raj.*

খেড় (=খড়), *s.*, long coarse grass: straw.

খেড়ি (from খেড়), *adj.*, thatched with coarse grass or straw, having a roof of coarse grass or straw; খেড়ি ঘর, an open thatched shed. *Dac.*

খেড়িকি (=*খিড়্‌কী), *s.*, a window. *Dac.*

*খেত (from Skt. क्षेत्र), *s.*, a field; a plot of land; an expanse of fields: খেত বট (corrup. of ক্ষেত্র বণ্টক), *adj.*, (a chiṭṭha or paper) containing full particulars about the fields, their areas, occupants, etc., and the estates to which they belong. *Raj.*

খেতী (from খেত), *s.*, cultivation of land; the status of a cultivator. *Dac.*

খেদিতে (=*খেদাইতে), *v.a.*, to drive away, chase away, hustle away. *Dac.*

খেপ (prob.=ক্ষেপ a throw, a cast), *s.*, first meaning prob. a 'shot,' a venture; a trip, a voyage, *Raj.*; a trading trip by boat; trading by boat, *E. Beng.*; an occasion, a time.

খেমটালী, *s.*, a dancing woman (and prostitute). *Dac.*

খেয়া (*fr.* খেইতে), *s.*, a ferry. *24-Pargs.*; খেয়া ঘাট, ferry place, ferry. *24-Pargs.*

খেয়াল, *adj.*, slender. *Jess.*

খেরি (=খেউরি), *s.*, shaving.

খেশী (from Pers. خويش own; a kinsman), *s.*, a relation, relative, kinsman. *Chit.*

*খোঁচা (from খোঁচ thrusting, pushing), *s.*, a dent, an indented mark or wound. *Jess.*

খোঁট, *s.*, corner (of a mosquito curtain). *24-Pargs.*

খোচা (from খোঁচা q.v.), *adj.*, dug, cut, broken up, *Jess.* খোচা মারিতে, to dig a thing into the ground (so as to feel what is beneath), *Chit.*

খোচা (same as foregoing), *s.*, an abrasion of the skin. *Bog.*

খোড়া, *s.*, a large cane-basket. *24-Pargs.* See খড়া.

খোদ (Pers. خود self, own), *s.*, (a raiyat's) own homestead land. *Raj.*

খোন্দকার (Arab. خاوند ر), Haughton gives খোনকার as "the person among the Mohammedans who performs the ceremony of circumcision."

খোপ (same as Hindi खोप), *s.*, a recess (e.g. খালি খোপ the box-like recess at the bottom of a carriage, where the feet are placed); a chamber, a room, *Jess.*; a corner (e.g. খোপের দাওয়াই a small off-verandah); side, direction, *Bog.*

*খোরা, *s.*, a small stone cup. *Raj.*

খোরী=*খোরা. *Raj.*

*খোল, the bowl of a hukka. *Jess.*

*খোলা (from খুলিতে, to open), *adj.*, open, free, unobstructed; খোলা ঘর, an open shed; খোলা বাড়ি, a bāṛi unenclosed, a bāṛi open on all sides; খোলা ভ্রূ, *adj.*, having eyebrows that do not unite.

*খোলা (same as foregoing), *s.*, any open space; an open space in a bāṛi, the courtyard, (=আঙ্গিনা), *Raj.*; a threshing floor (=খলা), *Raj.*: a site, a place, e.g. হাট খোলা, the site of a hāṭ, a market-place; খেত খোলা the open field, a field.

*খোলা, *s.*, a tile. খোলার ঘর, a tiled hut. *24-Pargs.*

গ

গ This letter is often confused with ব in Midnapore and Oṛissa, especially at the beginning of words.

গওয়াইতে (either a causal from Skt. root গা, to go, or a corrup. from Pers. root گذر to pass over, to elapse), *v.a.*, to pass, spend (time); to live. *Bak.*

গচি, *s.*, a branch stuck into the ground to form the upright of a fence, a fence-post. *Dac.*

গচ্ছান (=*গছান), *s.*, making over, consigning, entrusting. *Raj.*

গছানী (from *গছান entrusting, depositing), *adj.*, deposited, entrusted; গছানী জমি, land leased out by an indigo factory to a raiyat on the agreement that he is to cultivate indigo on it for the factory (while he may grow any crop besides for himself). *Jess.*

গঞ্জিয়া, *s.*, a purse. *Raj.*, *24-Pargs.*

*গড়, *s.*, a mixture; a medium, an average, *gen.*; গড়ে *adv.*, on the average; also indicates precision, গড় দুই, two precisely, *24-Pargs.*

গড়ন্তে (see গড়িতে), *loc.* case of verbal noun গড়ণ ?

গড়া (prob. connected with গড় a ditch, and Hindi गड़ना, to be sunk in the earth—which come prob. from Skt. गर्त a hole, a cave), *s.*, a place (in a bāṛi) where cattle are kept; a raised earthen feeding-trough (in a bāṛi) for cattle. *Raj.*

*গড়াণ (garāṇa), *adj.*, sloping or shelving downwards (as a canal-bank). *24-Pargs.*

*গড়িতে (prob. from Skr. root गड् to distil, to run as a fluid), *v.n.*, to roll, *gen.*; to reel, to stagger, *Jess.*: to decline, sink, e.g., বেলা গড়িয়া গেল, the day had begun to

decline, *gen.*; and দুই প্রহর গড়ার সময়, some time after noon, *Raj.*; দুই প্রহর গড়ন্তে, just after noon, *Bog.*

*গড়িতে, *v.a.*, to shape, to make, to fashion, *gen.*: to forge (as a sickle), *Jess.*

গড়েলা, *s.*, a passage or corridor (in a building). *24-Pargs.*

গণা পড়া (from গণিতে and পড়িতে), *verbal n.*, counting and reading; calculations (applied to the black arts). *Mald.*

গণ্ডকল, *s.*, quarrel, contention. *24-Pargs.*

গতহেল্লা (perhaps from Skr. গত gone and হেলা disregard, neglect; or possibly the English 'go to hell'); with দিতে to cast off utterly, to refuse to have anything more to do with (any one). *Jess.*

গদ (prob. connected with Hindi গদলা muddy), *s.*, mud. *24-Pargs.*

*গদি (same as Hindi গদ্দী), s., a cushion, seat; a throne: গদি ঘর a business-house, office. *Mald.*

*গদিয়ান (from *গদি), *adj.*, possessed of a seat, *gen.*: *s.*, a chief agent or manager in an ārat or warehouse, *Mald.*

গদু, *s.*, a very large kind of boat. *Chit.*

গবর (corrup. of *গোবর), *s.*, cow-dung; গবর মাটি, cow-dung. *Dac.*

গম, *adj.*, good (=ভাল), *Chit.*; *adv.*, well, much, *Chit.* Cp. সুগম্মতে.

গমিতে (from Skr. root গম্ to go), *v.n.*, to go. *Chit.*

*গয়াল (ধান), *adj.*, a kind of large-grained paddy. *Dac.*

গর (Arab. غير) *prefix*, to words of Arabic origin, to give an opposite meaning.

গরুপ (Skr. গোরূপ, which occurs in Vāyu Purāṇa 87, 31), *s.*, cattle. *Chit.* [From this is, no doubt, derived the shortened form গরু].

গরুপ, *s.*, a cowherd. *Chit.*

গরা, *s.*, handle of a khantā. *Dac.*

গরুবারি, *s.*, tending cattle by turns for one another (among villagers). *Sylh.*

গর্দনি (from Pers. گردن the neck), *s.*, a seize or push by the back of the neck. *Mald.*

গর্দনিয়া (=above), *s.*, pushing a person by the back of the neck. *Chit.*

*গর্ভ (Skr.), *s.*, a fœtus or embryo; the womb; the inside of anything; *gen.*: that which is contained within or under (anything else), e.g. গর্ভ রাইয়ৎ an under-raiyat, *Raj.*

গর লাইক (غير لائق), *adj.*, unfit for cultivation, unculturable (as land).

গলই (=*গল and *গলি and Hindi গলহী), *s.*, the prow (of a boat). *Mald.*

*গলা (from গল the throat), *s.*, a voice, a loud voice, *gen.*; talking, noise, *Mald.*

*গলি (=Hindi গলী and গল্লী), *s.*, a lane, a narrow passage, defile, *gen.*; a narrow opening, interval or space, as between the fingers or toes (*Dict.*), or between the top of a wall and the roof, *Mald.*

*গল্প (Skr.), *s.*, story, chit-chat, *gen.*; গল্প মারিতে *v.n.* to chatter away, spin a long yarn, *Mald.*

গস্তি (from Pers. گشت going round, perambulation), *s.*, a going round, patrolling (by police and chaukidars), *gen.*: often compounded with *Eng.* "round", রাউন গস্তি going the rounds, patrolling.

গহেনা (=*গহনা and Hindi গহনা), *s.*, ornaments, jewellery.

গাইট (=*গাঁইট, from Skr. গ্রন্থি a knot), *s.*, a knot. *Mald.*; *Bak.*

গাইটা=গাটিয়া q.v. *Raj.*

গাউড়া (corrup. of গাড়য়া and of গাড়িওয়ান), *s.*, a gāṛiwān, a cartman. *Dac.*

গাউপ (গল্প), *s.*, 1. talk, 2. a tale. *Chit.*

গাঁওয়ালী (from গাঁ a village), *s.*, a large body of villagers, a village conclave. *Bog.*

*গাঁতা (from গাঁতিতে to tie together, and Skr. গ্রন্থি a knot), *adj.*, tied together, knotted; knit together, arranged orderly, *gen.*; *s.*, a combination of men who work together on each other's land by turns, *Jess.*

গাঁতাই (from গাঁতা), *adj.*, relating to a gāṁtā or combination of mutual workers. *Jess.*

গাঁতি (prob. from গাঁতা), *s.*, a kind of land tenure (prob. originally taken by a number of men jointly), *C. Beng.*: a domain, place of authority or dominion, *Jess.*

গাঁথি (Skr. গ্রন্থি a knot), *adj.*, having knots, knotted: having knobs or protuberances (as a stick). *Howr.*

গাঙ্গ (from গঙ্গা the Ganges), *s.* (1) a river (generally); (2) a large river, *Chit.*

গাঙ্গিনা (from গাঙ্গ), *s.*, a small stream, rivulet. *Raj.*

*গাছ, *s.*, a tree; a shrub, *gen.*; trunk of a tree, *Chit.*: *applied metaphorically to various things with some resemblance thereto*, e.g. the branch (of a stream), *Khul.*: গাছ ধান, standing paddy, paddy reaped with the stalk, *24-Pargs.*

গাছা (from গাছ), *s.*, a wooden stand. *Mald.*

গাটিয়া (from *গাঁটি a knot), *s.*, a kind of ear-pendant. *Raj.*

গাটে, *adv.*, leaning one's body against (anything). *Chit.*

গাঠ (from গাঁঠরি and গাঁঠি), *s.*, a bundle. *Dac.*

গাড়ন, *s.*, jewellery, ornaments. *Raj.*

গাড়া (from গাড়িতে to dig), *s.*, a small oblong tank. *Raj.*

গাড়ি (connected with গাড়িতে to dig), *s.*, low land. *Raj.*

গাড়িঁ (corrup. of গাঁঠি), *s.*, a bundle. *Hug.*

গাড়িতে (causal from Hindi গড়না to be sunk in the earth; connected with *গড় a ditch) *v.a.* and *n.*, to dig.

গাড়িয়া (=গাড়া), *s.*, a small oblong tank. *Raj.*

গাড়োই, *s.*, the last day of Aświn. *Tip.*

গাড়োল (=*গাড়ল a sheep), *s.*, a sheep. *24-Pargs.*

গাঢ়া (connected with গাড়িতে to dig), *s.*, a ditch, trench. *Mald.*

গাতা (perhaps from *গাঁতা knotted), *s.*, a swelling caused by a blow. *Chit.*

গাতা (=গাঁতা), *s.*, a combination of mutual workers. *Jess.*

গাতিতে (from গা the body, with perhaps corrup. of তুলিতে to raise), *v.n.*, to rise up, get up. *Jess.*

গাতিতে, *v.n.*, to pierce, penetrate (*lit.* to bury one's self into?). *Sylh.*

গাদ গুদ (from Skr. root গদ্ to speak; with গুদ as a jingle to it), *s.*, whispering. *Mald.*

গাদা, *s.*, wooden block of the ploughshare. *Chit.*

গাবর, *s.*, fisherman, *Sylh.* See গাবুর.

গাবা গাবি, *s.*, disturbance, commotion, hubbub, row. *Mald.*

গাবি (from Arab. غائب absent), *s.*, absence (by a servant) from duty; the time of such absence. *Raj.*

গাবুর, *s.*, coolie, labourer; servant. *E. Beng.* See গাভুর and গাবর.

গাভুর, *s.*, a hired labourer. *Bak.* See গাবুর.

স্থী corrup. of গৃহস্থী and গার্হস্থ্য. *Mald.*

গালপটা (from গাল the cheek, and পট cloth), *s.*, a cloth wrapped round the face (so as to conceal all the features except the eyes, nose and mouth); a kind of mask for the face. *Adj.* having such a cloth, masked, muffled up.

গালপট্টা (from গাল the cheek, and পট্ট cloth) = গালপটা.

গালপাটা = গালপটা. *24-Pargs.*

গালা (from Skr. root গল্ to drip, ooze, trickle), *s.*, juice. *Raj.*

গালা (from গলা, voice), *s.*, a voice. *Mald.*

গালাল (prob. from গলা and গালা voice), *s.*, abuse, scurrilous language. *Hug.*

*গালি, *s.*, abusive or scurrilous language, *gen.*; গালি পাইতে (prob. for পাড়িতে) to abuse, *Sylh.*

গালী গালাজ (from গালী abuse; = Hindi গালী গলূজ), *s.*, abuse, scurrilous language, *C. Beng.*: with পাড়িতে to abuse, revile, *Jess.*

গাহিরী, *s.*, toll due (from vessels lying) in a river more than a fixed time (3 days). *Dac.*

গাহেক (perhaps from Skr. root গাহ্ to dive into, plunge into), *s.*, the person who gives clothes (to a washerman) to be washed; a dhobi's customer. *Dac.*

গি (short for গিয়া) *past part.*, having gone. *Tip.*

গিণি = গির্ণি. *24-Pargs.*

গির (= *গিরা, from Pers. گرہ a knot), *s.*, a knot (of any kind; e.g. in a cloth, in a bamboo). হাটুর গির knee, knee-cap.

গিরা (corrup. from ঘিরিতে to surround), *s.*, a fence. *Chit.*

গিরাকি (prob. from Arab. غرق immersed, sunk), *s.*, an anchor. *Raj.*

গিরিস্থালী corrup. of গৃহস্থালী, q.v., *Raj.*

গিরু (= †গিরা Pers. گرہ), *s.*, a knot, node, or joint (in a bamboo or sugarcane). *Dac.*

গির্ণি (গৃহিণী), *s.*, mistress of a house, lady of the house (women's expression). *24 Pargs.*

গীলা (perhaps corrup. of Arab. قُفل, vulg. kulaf, a lock), *s.*, a padlock (= তালা). *Chit.*

গুআ (*pronounced* gwa; *prob.* corrup. of *গুলা) *particle*, = টি and টা; affixed to numerals to particularize them, e.g. দু গুআ = দুটি two, *E. Beng.* See উআ.

গুগল (perhaps connected with গুগ্গুল a sort of fragrant gum-resin), *s.*, spittle, saliva (of cattle). *Raj.*

গুগাল = গুগল. *Raj.*

গুঙ্গা (from Pers. گُنگ dumb), *adj.*, dumb, speechless.

*গুজরী or গুজরি, *s.*, a tubular anklet with (heart-shaped) pendants, *Jess.*

*গুজস্ত (from Pers. گذشته past), *adj.*, past, elapsed, *gen.*; গুজস্ত জমা a rental carried on from the preceding year, a rental paid in the preceding year, *Tip.*

গুজার (from Pers. گذار passing on, forwarding), *adj.*, published, notified, made known. *Chit.*

*গুঞ্জা, *s.*, the stubble left after cutting *san* or thatching grass. *Chit.*

গুটা (prob. from *গুটিতে to roll up, collect), *s.*, the vegetation pulled up in a bil (marsh) and laid in lines upon, and to form, āils. *Jess.*

গুটি, *particle*, affixed to numerals, to particularize them; e.g. গুটি দশ ten. *Jess.*

গুড় (prob. same as গোড় q.v.), *s.*, the heel.

গুড় (*pronounced* guṛa), *s.*, powder, anything reduced to powder, ash. *Jess.*

গুড়া powder, any pulverized substance. *Raj.*

গুড়া pulp, soft substance. *Jess.*

গুড়, *adj.*, stout, thick (as a plank). *Raj.*

গুণ (from Pali and Skr. गोणी a sack; the diction. gives it erroneously as গুন), *s.*, a sack, a gunny bag.

গুণি (from *গুণ a rope), *adj.*, relating to a towing-rope; গুণি রাস্তা, a towing-path. *Pub.*

গুণিতে (corrup. of *গণিতে, to count), *v.a.*, to count, reckon up.

গুতা (=*গুত), *s.*, a thrust, poke, push (with something).

গুদারা (from Pers. گذارا a ferry), *s.*, a ferry. *Tip.*

গুদি, *s.*, a ferry. *Khul.*

গুন্দি, *s.*, a wisp (of straw). *Mald.*

গুপ্তী (from গুপ্ত concealed), *s.*, a dark lantern. *Dac.*

গুয়া *particle;* see গুআ.

গুয়া (from Skr. root গু to void excrement), *s.*, the anus. *Bog.* See গোআ.

গুয়াল (corrup. of গুগাল), *s.*, spittle, saliva. *Raj.*

গুলা জমা, *s.*, a cultivator's holding paying a produce rent. *24-Pargs.*

গুরি, *s.*, fisherman. *Mald.*

গুষ্টি (for *গোষ্ঠী), *s.*, family, kindred.

গুঁইতে (prob. onomatop.), *v.n.*, to groan, moan. *24-Pargs.*

গুঁখা (from *গু ordure and খাইতে to eat), *s.*, one who eats ordure or filth. *C. Beng.*

গুঁখেকো=গুঁখা. *C. Beng.*

*গৃহস্থ, *s.*, a house-holder, *gen.*; a husband (women's word), *Sundbn.*; a husbandman, a settled cultivator of land, *gen.*

গৃহস্থালী (from গৃহস্থ), *s.*, the position or status of a settled cultivator of land (who has land and a plough of his own). *Raj.*

গৃহস্থী (from গৃহস্থ), *s.*, the status of a settled cultivator of land. *E. Beng.*

গেঁজ (=*গেঁজ্যা and Hindi गंजिया; perhaps from Pers. گنج a treasury), *s.*, a purse, a small bag. *Raj.* See গেজিয়া.

গেছুয়া (from গাছ a tree), *s.*, a man who taps date-trees.

গেজিয়া=গেঁজ. *24-Pargs.*

গেঞ্জি, *s.*, a loosely-woven elastic vest or jacket. *24-Pargs.*

গেড়ে=গাড়িয়া, q.v., *Raj.*

গেলাস (from Eng. 'glass'), *s.*, any drinking vessel shaped like a tumbler; *but generally*, a brass tumbler.

গোআ (=গুয়া), *s.*, the anus. গোআ মারিতে to commit sodomy (with acc.). *Dac.*

গোই (1) a water-passage (through an embankment), *24-Pargs.*; (2) a sluice, sluice-gate, sluice-pipe, *24-Pargs.*; (2) a small pool, a hole containing water, *24-Pargs.*

গোই, *past participle* (=গিয়া or যাইয়া), having gone: used commonly *after* a finite verb to emphasize it; হে গেল্ গোই উজু he went there direct. *Chit.*

গোইল
গোএল } corrup. of গোহালী q.v., *Hug.*; *24-Pargs.*

গোঁ (prob. onomatop. see গুঁইতে), *s.*, groaning, moaning. *24-Pargs.*

গোঁঘা, *s.*, snail. *Chit.*

*গোগা (connected with Hindi गूंगा), *adj.*, dumb, mute, *gen.*: stupid, dull, doltish, *24-Pargs.*

গোচা, *s.*, rib of a boat. *Raj.*

গোচালা (from গো a cow and চালা a thatched roof), *s.*, a cow-shed. *Tip.*

গোছ, *s.*, a stake for fixing nets in the water. *Chit.*

গোছরা (prob. from গোছ), *adj.*, tethered to a stake (as cattle when left to graze). *Dac.*

গোছা, *s.*, the ankle. *Jess.*

গোছি (prob. from গোছ), *s.*, a stick. *Chit.*

গোঞ্জা, *s.*, stubble, the stalks left on the ground of any plant which has been reaped (e.g. of indigo). *Raj.*

*গোটা, *adj.*, whole, entire, unbroken, *gen.*; distinct, clear (as writing), *Mald.*

গোড় (prob. connected with গোড়া q.v.), *s.*, the heel, *Raj.*: the leg, *Mald.*

*গোড়া, *s.*, the base or foundation (of anything); as, the root or base (of a tree), the base or foundation (of a building), the basement or lower part (of a house), the stalk (of paddy): the greater or main end or extremity, as, the mouth (of a river), the end (of a char), the end (of the handle of a sickle).

গোড়া, *s.*, a stick of dried cow-dung (used as fuel). *Mald.*

গোড়াইত (=Hindi गोड़ैत), *s.*, a zamindari peon. *Mald.*

গোদা (prob. corrup. of গো a cow and দহর), *s.*, a cattle-track. *Raj.*

গোধা, *s.*, bund, embankment. *Chit.*

গোন (=*গৌণ; perhaps from Skr. गौण subordinate, secondary), *s.*, delay. *Chit.*

গোনা, *s.*, any corner or tongue of cultivated land protruding into jungle. *Chit.*

গোপ *s.*, a large pond formed by the collection of water in a depressed area of land. *Jess.*

গোপাঠ (*fr.* গো+পথ?), *s.*, a cattle path.

গোপালভোগ, *s.*, and *adj.*, a superior kind of mango. *Hug.*

গোপ্তা, *s.*, a private path. *Chit.*

*গোবরাট (from গোবর cow-dung, according to diction.; but doubtful), *s.*, the threshold of a door *gen.*; the wooden sill of a window; the frame at the bottom of an opening in a mat-wall, *Jess.*

গোবাম (from গো a cow, and ভ্রম wandering?), *s.*, common pasture-land, a common. *Chit.* (=চটান).

গোমছ (prob. from Pers. گُنبد a dome), *s.*, a dome, cupola. *Jess.*

গোমটা (prob. from Skr. root গুণ্ঠ্ to envelop, conceal), *s.*, a marriage veil, *Jess.*—The diction. gives ঘোম্‌টা a veil, muffler, and derives it from Skr. অবগুণ্ঠিকা a veil.

গোমটা, *s.*, cow-dung. *Chit.*

গোয়াইল, *gen.*
গোয়াল. *Chit.*
গোয়ালি. *Jess.*
} (corrup. of *গোহালী q.v.), *s.*, a cow-shed, cow-house.

গোয়াঁরা (prob. from Pers. گهواره a swing, cradle), *s.*, a ta'ziya, the structure carried about by Mohammedans at the Muharram. *Raj.*

গোরা (perhaps from Arab. غراره a large sack), *s.*, a bag, sack. *Hug.*

গোরা, *s.*, a low reed fence to hold fodder for cattle. *Jess.*

*গোরু (prob. a shortened form of গোরূপ q.v.; compare Hindi বছরু), *s.*, cattle, an ox or cow.

গোরূপ (from গো a cow and রূপ form), *s.*, cattle, an ox or cow. *Raj.* See গরূপ.

*গোল (from Pers. غُل noise, tumult), *s.* (1) noise, hubbub, tumult; (2) row, disturbance; (3) quarrel, *Sylh.*

*গোলমাল (from গোল noise and মাল as a jingle), *s.*, noise, tumult (*gen.* implying that there is something *wrong*); disorder, confusion; culpable error, reprehensible mistake; mal-practice, falsification.

গোলযোগ (from গোল noise, and যোগ joining, adding), *s.*, noise, hubbub, tumult.

গোলা (from গোল noise), *s.*, noise, tumult; disturbance, row, confusion. *Mald.*

গোলটী পোলটী, *s.*, talking, narrating, relating. *Jess.*

গোলপাতা (from গোল a ball? and পাতা a leaf), *s.*, the name of a kind of plant (which grows in the Sundarbans, and is used for coarse matting and thatching).

গোলোক যোগ (prob. wrongly for গোলযোগ), *s.*, cyclone, storm-wave. *Bak.*

গোসাইঁ (from Skr. গোস্বামী a religious mendicant, ascetic; and Hindi গোসাঁই a saint, the deity), *s.*, an honorary title for Brahmans; a saint, holy person, *gen.*; a god or demon of the forest (among Santāls), *Mald.*

গোস্ত (prob. Pers. گشت going around), *s.*, touting for business, seeking for customers. *gen.*

গোস্তদার (from গোস্ত)=গোস্তিয়া. 24-*Pargs.*

গোস্তাবারি (perhaps from Pers. گوشت flesh, and termin. وار possessing), *adj.*, well-developed in body (as a man), stout, full in figure. *Jess.*

গোস্তি (from গোস্ত)=গোস্তিয়া. 24-*Pargs.*

গোস্তিয়া (prob. from Pers. گشتیا a collector of market dues, and گشت going around), *s.*, an agent who travels about to purchase (articles of trade for his master), a commercial agent. *Pub.*

গোহাইল=গোহাল, q.v., *gen.*

গোহাল (prob. from গো a cow and শালা a hall, room), *s.*, a cow-shed, cow-house, *gen.*—Note: the diction. gives গোহালী and derives it from গো and হালী, but does not give হালী, and there is no such word applicable to such a derivation as far as I know, in Bengalī, Sanskrit or any other North Indian language.

গোহালি=গোহাল, q.v., *gen.*

গ্যা (gyā ; corrup. of আজ্ঞা ? q.v.,) *an interjection used* during hesitation, *E. Beng.* espec. *Chit.* ; see তোমার.

ঘ

ঘইলা (corrup. from ঘটী a small pitcher ?), *s.*, a water-pot, pitcher. *Mald.*

*ঘণ্টা, *s.*, a bell, gong ; the striking of a clock ; the time between the strikings of a clock, an hour ; a short space of time, *gen.* ; কিছু ঘণ্টা or অল্প ঘণ্টা a short time ; ঘণ্টেক (=ঘণ্টা+এক) a short time, *Jess.*

ঘনা (from *ঘন), *adj.*, close, thick, dense. *Mald.*

ঘনা, *s.*, a portion (of land) which juts out (from a field), an outlying corner or recess. *Raj.* See ঘোণা.

*ঘর, *s.*, a house. ঘর লইতে to occupy a house, to reside in a house, *Chit.* ঘরজামাই a son-in-law who lives in his father-in-law's house (the expression now implies inferiority or contempt). এক ঘরে (restricted) to a single house, excommunicated ; একঘরে করিতে, to excommunicate, put out of caste ; একঘরে হইতে, to be excommunicated, put out of caste.

*ঘরা (from *ঘর), *s.*, a receptacle, drawer, *gen.* ; an open shelf, *Raj.*

ঘরা কাটী (from *ঘরা and *কাটী a piece of wood), *s.*, an open shelf. *Raj.*

ঘা, *s.*, a wound with a pointed weapon (?) ; ঘা মারিতে to strike a blow with a pointed weapon (?) *Sylh.*

ঘাই, *s.*, the place where a silk-reeler (kāṭāni) sits, a silk-reeling place. *Raj.*

ঘাইন ঘর, *s.*, a house where mustard seed is pressed, an oil-mill house. *Jess.*

ঘাইর মিল (Arab. غَيْر negative and মিল agreement), *adj.*, dissimilar, unlike. *Raj.*

ঘাটা, *s.*, the path to a bāṛi. *Chit.*

ঘাট (for *ঘাইট and *ঘাটি), *s.*, fault, wrong-doing. *Hug.*

*ঘাট (from ঘট্), *s.*, a landing-place at the water's edge ; a passage or steps leading down to the water's edge ; a bathing-place ; a ferry ; a quay, wharf. ঘাটে যাইতে to go to stool, to ease one's self (no doubt from the habit of resorting to river-banks for the purpose). *Bog.*

ঘাট পান (ঘাট a ferry and পাইতে to obtain), *s.*, ferry-hire, ferry-toll. *Chit.*

ঘাটা, *s.*, a path, foot-track, narrow road, *N. Beng.* ; the path leading into a bāṛī, *Raj.* and *Chit.*

ঘাটি, *s.*, a police beat, *Dac.* ; an outpost, *Hug.*

*ঘাড়, *s.*, the nape or back of the neck ; the shoulder (of an animal).

ঘাম, *s.*, finger-mark. *24-Pargs.*

ঘারা (prob. from Skr. root হন to strike), *s.*, the blunt edge (of a cutting instrument). *Dac.*

ঘাসী (from *ঘাস grass), *s.*, a grass-cutter, grass-seller. *Dac.*

ঘুঁড়ি, *s.*, chaff, husk. *Raj.*

ঘুচা, *s.*, a promontory or point (in a river). *Jess.*

ঘুচি with দিতে to plant (rice seedlings). *Bak.*

ঘুটি (prob. connected with * ঘুটি the ancle), *s.* (1) lump of earth, clod ; (2) small heaps

of earth (placed to mark the boundary of a field); (3) a silkworm-cocoon; (24-*Pargs.*)

ঘুণ *adj.*, middle, central (applied to situation); e.g. ঘুণপাড়া the middle pāṛā (of a village). *Raj.*

ঘুমটি (connected with Hindi घूमना to turn, go round), *s.*, a sentry-box, guard-box. *Jess.*

ঘুমষি, *s.*, a string worn round the waist, waist-cord. *24-Pargs.*

ঘুরা (from ঘুরিতে to whirl), *adj.*, round-about, circuitous, indirect. *Jess.*

*ঘুরিতে, *v.a.*, to whirl, turn round, roll; to whirl about, brandish (a stick); to roll in, draw in (as a fishing net).

ঘুরু = ঘুরা. *Jess.*

ঘুশান (connected with ঘুচাইতে to untie, open), *adj.*, open (as the lid of a box). *Raj.*

ঘুষাইতে, *v.a.*, to gather up, roll up, coil up (as a rope). *Jess.*

ঘূম (*ঘুম), *s.*, sleep.

ঘের (fr. ঘেরিতে to encompass), *s.*, going around along the boundaries (of land). *Jess.*

ঘেরাও (fr. ঘেরিতে), *s.*, surrounding, encompassing. *Sylh.*

ঘেরি (fr. ঘেরিতে), *s.*, enclosure.

*ঘোঁজ (prob. connected with *গুঞ্জিতে to thrust in, tuck in), *s.*, a bend, a curve; bend in a road, crooked path; a recess, corner.

ঘোঁজা (=ঘোঁজ), *s.*, a bend, curve.

ঘোঙ্গাইতে (prob. onomatop.; see গোঁ), *v.n.*, to groan, moan. *Chit.*

*ঘোড়া, *s.*, the cock (of a gun). *Chit.*

ঘোণা (prob. from Skr. घोणा the nose), *s.*, a portion (of land) which juts out (from a field) an outlying recess or corner. *Jess.* See ঘনা.

*ঘোর, *adj.*, terrible, dreadful; formidable; dark; *gen.*: pitch-dark (as night), *Raj.*; dusk, dusky (as evening), *Jess.*; gloomy, dim (as eye-sight), *Pub.*

*ঘোর, *s.*, horror, awfulness; darkness, gloom, *gen.*: dusk, evening-dusk, *Jess.*; dimness (as of eye-sight), *Pub.*

চ

চইতে (for চষিতে), *v.a.*, to plough, till. *E. Beng.*

চক (from Skr. चक्र a wheel, circle, district?), *s.*, a large block of land, *S. Beng.*; a parcel of ground, a field, *Dac.*

চকম (corrup. of চঙ্গ?), *s.*, a ladder, steps. *Tip.*

চকা (corrup. of চিৎকার?), *s.*, an outcry, alarm. *Sundbn.*

চঙ কাপড, *s.*, a kind of cloth with a variegated stripe down the middle (generally worn by Mags). *Chit.*

চঙ্কা (prob. erron. for *শঙ্কা), *s.*, fear; intimidation, menace. *Mald.*

চঙ্গ, *s.*, a ladder, steps, *Dac.*: a ladder used as a harrow (মই), *Jess.*: a high machān or platform in fields, *Chit.*

চঙ্গ (=চণ্ডাল), *s.*, a chaṇḍāl. *E. Beng.*

চটক (from *চটক glitter), *adj.*, glazed. *Pub.*

চটা (from *চটিতে to split off in pieces), *s.*, a piece of bamboo split lengthwise.

চটাই (*fr.* চটা), *s.*, mat, matting.

*চটান, *s.*, uncultivated grass-land, pasturage (=গোবাম).

চট্‌কা (from *চট্‌কাইতে to knead dough, to temper clay), *adj.*, trampled, trodden down. *Jess.*

চট্টি (=*চট and *চটী), *s.*, gunny cloth, sack-cloth. *Mald.*

চড়ি (no doubt connected with *চড়ই and চড়ী a sparrow, and *চিড়িয়া a bird), *s.*, the yellow oriole or mango-bird; called also হল্‌দি চিড়িয়া. *Chit.*

চড়ু (or চরু ?=*চাড়ী a boat-pole; perhaps connected with ছড়ী a switch, thin stick), *s.*, a bamboo pole for pushing (a boat) along, a punting pole (=লগ্গী). *Jess.*

চণ্ডি পাশ, *s.*, the front part of a boat. *Raj.*

চণ্ডি মণ্ডপ, *s.*, the idol-house in a private dwelling.

চত (corrup. of চতর). *Raj.*

চতর, *s.*, the quadrangle formed by houses on all four sides of the court-yard (আঙ্গিনা) *Raj.*

চত্র (corrup. of *চরিত্র), *s.*, behaviour, conduct. *Jess.*

চন্দা, *adj.*, like, similar. *Raj.*

চন্দী (see চুন্দী), *s.*, partial unconsciousness, partial loss of one's senses; e.g. চন্দী লাগিল he half lost his senses. *Raj.*

চন্দ্রবোড়া, a very large kind of snake. *Jess.*

*চন্দ্রহার (চন্দ্র+হার), *s.*, a silver waist-chain (worn by women), *gen.*; চার নহার চন্দ্রহার a quadruple-chained chandrahār, *Jess.*

চয়ল, *s.*, heavy bamboo spear with a detachable barbed point. *Sylh.*

চর, *s.*, any land formed in a river, whether above or below the surface of the water; an alluvial bank, a sand-bank, an alluvial island; a shoal—Note: the diction. gives চড়া with these meanings; but according to all my experience the word is চর, and Forbes gives the Hindi word as चर. *Note.* It is probably indigenous; see Journal of the Bengal Asiatic Society, 1911, p. 488. The grant is genuine.

চরা (from চর), *adj.*, consisting of char, alluvial; characterized by char, shallow.

চরা (from চর), *s.*, an expanse of alluvial māṭh or open land which has accreted to other land; an expanse of fields, a māṭh. *Raj.*

চরাণ, *s.*, key. *Raj.*

চরু see চড়ু.

চর্পাটা (? the slapping-place, from Skt. चर्पट the open palm of the hand), *s.*, the buttock. *Bog.*

চল (prob. from Skr. root चर्व् to chew; and connected with *চুআল the jaw, and *চোআলি the jaw-bone), *s.*, the jaw; the cheek. *Raj.*

চল (fr. চয়ল ?), *s.*, a bamboo fishing-spear with divergent prongs, *Tip.*; heavy bamboo spear with a detachable barbed point, *Sylh.*

চলা, *s.*, wood, timber. *Dac.*

চাঅর (corrup. of *চাকর), *s.*, a servant. *Chit.*

চাঅরী (corrup. of *চাকরী), *s.*, service; domestic service. *Chit.*

চাই, *s.*, a basket-work fish-trap. *Tip.*; *Chit.*

চাইতে (perhaps corrup. of চালিতে from চাল a thatched roof), *v.a.*, to thatch or roof with *san* grass. *Jess.*

*চাকা (*চাক anything circular), *s.*, a lump, clot; a lump of earth, clod; a piece of brick, brick-bat; *gold* bullion. *Dac.*

*চাগাইতে, *v.n.*, to be seized with a fit, to have a fit. *Jess.*

চাঙ্গরা (prob. connected with চঙ্গ a ladder, platform), *s.*, a bamboo platform at the prow of a boat. *Raj.*

*চাঙ্গারি (prob. connected with চাঙ্গরা), *s.*, a basket. *Dac.*

চটা, *s.*, a door or screen made of split bamboos plaited together. *Raj.*

চাট্য (? what can merely be licked, from চাটিতে to lick: or for চারি টি), *adj.*, little, small, trifling. *Jess.*

চাড্ডি (prob. corrup. of চাট্য), *adj.*, some; e.g. ধান চাড্ডি some paddy. *Hug.*

চাত, *s.*, a fishing rod. *Chit.*

চাতান (perhaps from Skr. চেতন observant, intelligent, alive), *adj.*, awake, alert; active, energetic; e.g. a 'sharp' man, a 'virulent' epidemic. *Bak.*

*চাতাল, *s.*, the masonry platform at the top of a pakka ghāṭ.

*চাদর (fr. Skr. rt. ছদ্ to cover, clothe; or fr. Pers. چادر a sheet), *s.*, a sheet, table-cloth or wide cloth; the cloth worn arround the upper part of the body by men.

চান (corrup. of *স্নান), *s.*, bathing. *gen.*

চান্দ (corrup. of *চন্দ্র the moon), *s.*, the moon; anything disk-like, e.g. a small disk attached to a nose-ring, *Raj.*; চান্দ খাড়ু a kind of bracelet, *Mald.*; চান্দ বোলাক a semi-circular bolāk, *Chit.*

চান্দ, *s.*, the general features, characteristics (of a thing; as of handwriting). *Dac.*

চান্দর (prob. connected with *চাঁদাড় the ridge of a house), *s.*, the flank or side (of a native house; the courtyard being the সম্মুখ or front, and the back being কাণাচ or পীছে).

চান্দরা (perhaps from চন্দর), *adj.*, tied or roped together by the neck sideways (as a couple of cattle). *Jess.*

চান্দা, *s.*, open spaces (in thatch). *Hug.* See চেন্দা.

চান্দি (=Hindi चान्दी), *s.*, the crown of the head. *Raj.*

চাপ (prob. from *চাপিতে to press down), *s.*, a (tiger's) lair.

চাপি (*চাপিতে to press down), *s.*, a crow-bar. *Dac.*

*চাপিতে, *v.a.*, to press down, *gen.*; to haul (a sail) downwards so as to make it taut, *nautical*: to press in, keep in (as a boat near the land, opposed to উঠি যাইতে to stand out from the land), *nautical*.

চাবলা, *s.*, a hollow.

চাম (Skt. चर्मन्), *s.* (1) a skin, *gen.*; (2) the human skin, *Chit.*; (3) leather, *gen.*

চামা, *s.*, shade (of all kinds), shadow. *Chit.*

চামুয়া, *s.*, a four-sided basket (=ডোঙ্গা). *Chit.*

চার, *s.*, a light tressle bridge made of bamboos or single trees (=সাঁখো). *E. Beng.*

চারম (Pers. چہارم) *ordinal*, fourth. *Chit.*

চারা (=চারু q.v. and Hindi चार a bait for fish), *s.*, a kind of cage for catching fish. *Jess.*

চারা খলা, *s.*, seed-bed, nursery for seedlings. *Chit.*

চারি (perhaps from *চরু a vessel for an oblation), *s.*, a large earthen gamla or tub (used for feeding cattle; also as a boat). *Raj.*

চারু (=চারা q.v.), *s.*, a kind of fish-trap. *Jess.*

*চালক, *adj.*, active, lively, *gen.*; চালক দিতে to cause to move along, set in motion, *Jess.*

*চালন, *s.*, sifting, winnowing. *Chit.*

*চালা (from চাল a thatched roof), *s.*, a kaccha verandah. *Mald.*

চালান (চালাইতে to drive forward or away), *s.*, despatching, forwarding (as goods or money), *gen.*: divorcing (a wife), *Dac.*; invoice, bill of lading, *gen.*

চালাপ, *s.*, hearing, perceiving by the ear; noise, talk. *Mald.*

*চালি, *s.*, a number of logs tied together, a raft of logs. *Raj.*

*চাষ, *s.*, agriculture, tillage; চাষ বাস (*with* বাস *prob. a jingle*), agriculture, cultivation of land.

*চাষিতে (চাষ), *v.a.*, to plough, till, *gen.*; to trim, to pare (as sugarcane, for use), *Jess.*

চিক, *s.*, necklace, 24-*Pargs.* Cp. ছিক.

*চিকন, *adj.*, fine (paddy). *Bak.*

চিকা (prob. *চিক a chick, blind), *s.*, rope-netting (to hold articles), *Pub.*: a string frame-work (for hanging things in, so as to carry them), *gen.* Cp. ছিকা.

চিক্কিত (prob. corrup. of চিৎকৃত; see চিক্কির), *s.*, a scream, shriek, cry; চিক্কিত পাড়িতে to scream, cry out. *Dac.*

চিক্কির (corrup. of চিৎকার), *s.*, a scream, shriek, cry. *Chit.*

*চিক্ চিক্ (*prob. onomatop.*) with করিতে *v.n.*. to flicker, send forth the last gleams (as a light, or the setting sun). *Raj.*

চিখাইর
চিখৈর } (*corrup. of* চিৎকার), *s.*, a scream, shriek. *Dac.*

চিটা, *s.*, small cross-rafters of split bamboo. *Chit.*

চিতিতে (চিৎ the understanding), *v.n.*, to come to one's senses, be conscious. *Raj.*

চিন (*চিহ্ন), *s.*, a mark, sign.

চিন, *s.*, a large concourse (of people). *Dac.*

চিন্তিতে (*চিন্তা thought), *v.n.*, to think, reflect.

চিন্দন, *s.*, the growing *of rice* (paddy), either sowing it or transplanting it out. *Chit.*

চিন্নাল
চিন্ন্যাল } , *s.*, a dwarf kind of rice (paddy), reaped in Sept.–Oct. *Chit.* See আউশ.

চিন্নি (*চিহ্ন), *s.*, a mark, sign. *Raj.*

চিনমিল, *s.*, lightning. *Raj.*

চিপি (*চিপিতে to squeeze), *s.*, a squeeze. *Dac.*

চিরণ (=*চিরুণ, চিরণী and চিরুণী) *s.*, a comb. The word appears to be derived from a word meaning 'horn'; see চিরণি.

চিরণি, *s.*, a worker in horn. *Dac.*

* চিলা (prob, from* চিল the kite) *s.*; see চীল.

চী corrup. of শ্রী; e.g. চীনি short for the name শ্রীনিবাস.

চীক *s.*, a necklet of small square plaques. 24-*Pargs.*

চীট (connected with * চিটা and চিটী) *s.*, an extract from a land-measurement paper (chiṭṭhā). *Raj.*

চীটা (connected with *চিট rust ?) *s.*, chaff (of paddy). *Dac.*

চীত *s.* a white mark or spot (on a horse's forehead). *Jess.*

*চীল (*চিল; Skr. চিল্ল; prob. onomatop. from its cry) *s.*, the kite (Falco ater). চীলের ঘর *Jess.* and *চিলা a small room on the roof of a house at the top of the staircase.

চীলা, *s.*, a track through jungle (such as a deer-track). *Bak.*

চুআ (corrup. of চুল) *s.*, the hair of the head. *Chit.*

চুট (connected with *চুটিতে to strike) *s.*, force; আঘাতের চুটে by the force of the blow. *Tip.*

চুনারি, *adj.* with শাড়ী, a kind of śāṛī printed completely with variegated patterns and colours. *Mald.*

চুন্দী (*prob. connected with* Hindi चुन्धा dim-sighted, purblind) *s.*, being dazed, losing one's presence of mind. *Mald.*: see চন্দি.

চুপী, *s.*, peeping into; চুপী দিতে to peep into. *Dac.*

চুমকি (*চুমুক sipping) *s.*, a broad-bottomed brass cup, *24-Pargs.*; *adj.* broad in proportion to height, squat (as jars, cups, etc.), *24-Pargs.*

চুরি, *s.*, the covering over cocoanut flowers. *Bak.*

*চুলা, *s.*, a small earthen fire-place for cooking.

চুলাই (*চুলা and Skr. चुल्ली a fire-place) *s.*, distilling (of spirits). *Raj.*

চুকা connected with চোঁকা whetted, sharp) *adj.* sharpened to a point, sharp-pointed, fine-pointed. *Tip.*

চুঙ্গা (*চুঙ্গী), *s.*, a small water-way in an embankment. *Chit.*

চুপা, *s.*, a clump, thicket; e.g. বেত চুপা a cane-brake. *Tip.*

চুল (for চুর fr. চূর্ণ) *adj.*, broken to pieces, shattered. *Mald.*

চুলকিতে (connected with *চুল্‌কাইতে to itch) *v.n.*, to itch.

চেক মুড়ি, (Eng. check), *s.*, the counterfoil of a receipt.

চেগা, *s.*, a land tenure (generally).

চেগার, *s.*, split-bamboo post. *Raj.*

চেঙ্গড়া (connected with Hindi चेंड़ा young) *adj.*, very young, *Bog*; a boy, lad, *gen.*

চেঙ্গা, *s.* (1) a short stout stick (used as a missile), *Jess.*; (2) a piece of the thorny bark of the wild palm, *Bak.*

চেঙ্গা মুরি *s.*, grass growing in long tufts. *Tip*

চেচড়াইতে, *v.a.*, to drag along on the ground. *Chit.*

চেচরা, *s.*, rushes, reeds.

চেঁচ (prob. for সেঁচ fr. *সেঁচিতে to sprinkle, irrigate), *s.*, watering (plants).

চেঁচিতে (prob. for সেঁচিতে) *v.a.*, to water, pour water on (plants).

চেট, *s.*, penis. *Sylh.*

চেতা (*চেতঃ), *s.*, consciousness. *Jess.*

চেনিতে (for *চিনিতে) *v.a.*, to know, recognize.

*চেলা, *s.*, a chip; a split bamboo. *24-Pargs.*

চেলা, *s.*, a male buffalo. *Chit.*

চৈতালি (prob. from চৈত্র the month Chaitra), *adj.* (scil. ফসল, the mustard and other crops) sown in Phālgun and gathered in Baiśākh. *Raj.*

চোআ, *adj.*, clear, open, unobstructed. *Jess.*

চোআঁ (prob. corrup. of *চোঙ্গা; see also চুঙ্গা), *s.*, a bamboo pipe or tube. *Jess.*

চোই (from চৌকি), *s.*, a chair. *Chit.*

চোইতে (corrup. of *চষিতে) *v.a.*, to plough, till. *Chit.*

চোইর, *s.*, a bamboo pole, a punting pole (=লগ্গী), *Pub.*: চোইর বাঁস a bamboo punting pole, *Tip.* See চোর.

*চোঁকা (Skr. चोक्ष sharp) *adj.*, sharp, keen; sharpened, whetted; sharpened to a point, sharp-pointed.

চোক (*চক্ষু the eye), *s.*, the eye; *Chit.*; also *চৌক.

চোকাই. *s.*, a tiny earthen pot (used for keeping things in). *Mald.*

চোঙ্গা (comp. Hindi चोआ the skin), *s.*, husk (of paddy), *Chit.*; of any kind of pulse.

চোতা, with ফর্দ্দ a memorandum, note, abstract. *Bak.*

চোপা, *s.*, bush, clump. *Bak.*

চোর (see চোইর), *s.*, a bamboo punting-pole (=লগ্গা), *Raj.*; a post, stake, *Tip.*

চৌ, *s.*, means, resource, expedient (=*উপায়). *Raj.*

*চৌ (corrup. of চতুর four) *gener. used in compound words to denote* four, e.g. চৌআলিয়া and চৌচালা q.v.; *but also used adverbially*, in four ways, in four parts, *in E. Beng.* e.g. চৌ ফেলি a bamboo split (*liter.*, thrown) into four pieces lengthwise.

চৌআইলা=চৌআলিয়া. *Chit.*

চৌআড়ি (চৌ four, and আড়া a rafter), *adj.* and *s.*, (a kaccha house) having the roof sloping four-ways, *Raj.*; a baiṭhak-khānā, reception room, *Mald.*

চৌআলিয়া (চৌ four and আলি ridge) *adj.* and *s.* (land) bounding (a field) on all four sides; boundaries. *E. Beng.*

চৌইর—চৌইর আড়া the principal rafters in a kaccha house.

চৌকাম (*fr.* চতুর), *s.*, bamboo harrow. *Sylh.*

চৌকি, *s.*, a fish-spear (single-pointed). *24-Pargs.*

চৌকী, *s.*, a moat, fosse. *Raj.*

চৌং (same as *চোঙ্গা), *s.*, a water-pipe, a rain-pipe. *Mald.*

চৌচালা (*চৌ four, and চালা a roof), *adj.* and *s.* (a kaccha house) having the roof sloping four-ways.

চৌড়ি (for চৌআড়ি q.v.), *adj.* (a kaccha house) having the roof sloping four-ways. *Jess.*

চৌবড়, *s.*, an āṅginā or uṭhān in the outer bāṛi; a cow-shed. *Mald.*

চৌবাচ্চা (Pers. حوض a vat, cistern), *s.*, a receptacle or place for depositing rubbish. *Mald.*

চৌরা (perhaps connected with *চৌরস flat, smooth), *adj.*, low, low-lying (as land). *Dac.*

চ্যক, *s.*, a fold of cloth at the waist, waist (?). *24-Pargs.*

চ্যান (corrup. of স্নান), *s.*, bathing, ablution.

ছ

ছ This letter properly has the sound of an aspirated *ch*; but throughout Bengal has the sound of *s* in every position except at the beginning of words. In East

Bengal it is pronounced *s* in every position, and has taken that sound so completely that Arabic and Persian names containing *s* are generally written with it, e.g., Salīm سليم ছলীম; Aṣghar اصغر আছগর; and similarly there is a tendency to confound initial স with ছ.

ছওয়া, *s.*, business of thatching. *24-Pargs.*

ছওয়াল (†ছাওয়াল), *s.* (1) a child, a boy; (2) children; in this sense often added to শিশু. ছওয়াল পীর the Boy-Saint, a semi-divine person believed to rule over the Western part of the Sundarbans, and propitiated by Hindus and Mohammedans in order to obtain immunity from tigers; his shrine is often marked only with a flag. Haughton derives ছাওয়াল from †ছাওবাল which is for ছাও + বাল.

ছট্টি (prob. connected with *ছোটিতে to be set free), *s.*, giving birth (to a child), delivery. *Dac.*

ছট্‌পট (=*ছট্‌ফট), *s.*, rolling about, tossing about (as a person in pain).

ছড় (prob. ছড়িতে to be set free), *s.*, a thrust *or* lunge with a spear. *24-Pargs.*

ছড়া (=*ছোট) *adj.*, small, little. *Chit.*

*ছড়া (*prob. fr.* ছড়িতে to strew about), *s.* [*The meaning seems to have been first* "strewing about," *then* "things strewn in a row," "a series," "a row or aggregate of like things connected together."]: (1) the sprinkling of a house before sweeping; (2) shot, small shot; (3) a band or string (of articles, *especially* ornaments) *as* তাবিজের ছড়া *and* এক ছড়া তাবিজ a band of tābizes; *and so* (4) *often pleonastically or to give definiteness, as* চার ছড়া গোট four goṭs (waist chains), *gen*; (5) a waist-chain, *Jess*; (6) a bunch of plaintains, *gen.*

ছড়া, *s.*, a small river, stream or canal. *Chit.*

ছড়ান (*for* *ছোড়ান), *s.*, a key. *Jess.*

ছড়ানী=ছড়ান. *Jess.*

ছত্তর (=*ছত্বর), *s.*, a division or separate portion of a bāṛi. *Raj.*

‡ছদ, *s.*, roof.

ছন পৈঞ্চা, *s.*, a kind of bracket shaped like half a bāuṭi, *Jess.*; পৈঞ্চা=Hindi पहुंचा the waist; the dictiony. gives পোঁচা the waist, and derives it from Pers. پنجه the claws, but it seems doubtful.

ছন্দুআ (prob. for সোন ধোআ a gold-washer), *s.*, a worker in precious metals. *Dac.*

ছাই গুষ্টি, *s.*, one's self and all one's family, one's self and all one's male and female relatives. *Jess.*

ছাইঁচ (for * ছাঁচি), *s.*, the eaves of a thatched house. *Chit.*

*ছাইতে, *v.a.* (1) to cover, cover over; (2) to roof, to thatch; (3) to put anything over as a cover (as a skin over a drum, cane-work in a chair.)

ছাইলী (Arab. سائل a mendicant), *s.*, a Mohammedan priest who lives on charity.

ছাউ (=*ছা from *শাবক the young of an animal), *adj.*, young, not full grown (vulg.) *Khul.*

*ছাউনি, *s.*, the skin (of a drum).

†ছাঁ=ছাউ.

ছাট, *s.*, the outskirts or appurtenances of a bāṛi. *Tip.*

ছাড়ন († ছাড়িতে), *s.*, release, delivery. *Dac.*

ছাড়া (ছাড়িতে), *adj.* (1) abandoned, relinquished; (2) separated from, apart, distant.

ছাড়া (*ছাড়া), *adv.*, without, besides; apart from, away from.

ছাদ (Skr.), *s.*, roof.

ছান =ছাঁ (vulg.) *C. Beng.*

*ছানি (*ছাইতে to cover) *s.*, a wicker or cane-work cover (around a glass jar). *Chit.*

ছাত=ছাট. *Tip.* See ভিটি.

ছান্দন, *s.*, fastening (an animal's forelegs) together, hobbling (an animal). *Bog.*

ছাপরা (*ছাপর a covering, or roof) *s.*, an open temporary hut or shed. *Jess.*

ছাম, *s.*, partition, allotment. *Raj.*

ছাম্‌ড়া, *s.*, a boy, youngster. *Jess.* See ছেম্‌ড়া.

ছাম্‌ড়ী (ছাম্‌ড়া), *s.*, a girl. *Jess.*

ছাম্‌দি (corrup. of *সম্বন্ধি) *s.*, a wife's brother (among Mohammedans). *Dac.*

ছায়নি=ছানি. *Chit.*

*ছালা (perh. fr. *ছাল bark), *s.* (1) coarse cloth, sack cloth, sail-cloth, *Dac.*; (2) a coarse sack or bag, *gen.*

ছিঁড় কুট (ছিঁড়িতে to tear+*কুট a small piece of anything) *s.*, a slip of paper for a memorandum.

ছিক *s.*, a necklace; *24-Pargs.* Cp. চিক.

ছিকা, *s.*, a kind of shelf. *Chit.*, Cp. চিকা.

ছিট, *adj.*, queer, eccentric, cracked. *24-Pargs.* See ছীট.

ছিটা (*ছিটিতে to sprinkle), *adj.*, sprinkled; ছিটা জমি land belonging to one village but situated within the limits of another village, *gen.*

ছিটান (*ছিটাইতে to scatter about) *s.*, a rubbish heap. *Dac.*

*ছিত, *adj.* (1) cut, divided, *gen.*; (2) fragmentary; ছিত জমি land belonging to one village situated within the limits of another village. *Raj.*

*ছিনাল, *adj.*, unchaste, *Jess.*; *s.*, a prostitute.

ছিপিতে (*prob. fr. Skr. rt.* ক্ষিপ্ to throw) *v.a.*, to throw, scatter, sprinkle (as water on a fire). *Mald.*

ছিবা, *s.*, a branch or sprout (of a bamboo). *Chit.*

ছীট, *adj.*, very queer, very eccentric, cracked; *24-Pargs.* See ছিট.

ছীটা (fr. ছিটিতে to scatter seed), *adj.*, broad-cast, e.g., ছীটা বুনা broad-cast sowing of seed, *Raj.*: *s*, broad-cast scattering of seed (generally without previous ploughing), *Raj.*

ছীত (fr. ছিত), *adj.*, fragmentary; dispersed, scattered. *Raj.*

*ছুটিতে, *v.n.* (1) to get loose, escape; (2) to be discharged; (3) to fly (as a cannon-ball); (4) to escape, hurry off, run away; (5) to run.

ছুট্‌কা (connected with ছোট little), *adj.*, inferior, subordinate, second-rate (applied to raiyats, as contrasted with প্রধান). *Raj.*

ছুড়ানি (=*ছোড়ান), *s.*, a key. *Tip.*

ছুতি(=*ছুত), *s.*, the communication of one thing to another, e.g. in the giving of some durbā grass when making a contract; compare Latin stipulatio (?). *Raj.*

ছুরা (*ছুরী), *s.*, a large knife. *Mald.*

ছেঁচ (connected with *ছেঁক্‌চা burnt, seared), *adj.*, charred. *Chit.*

ছেঁচ (fr. ছেঁচিতে) *s.*, an outlet for water (e.g. from a bīl). *Bardh.*

ছেঁচা, *s.*, coarse bamboo mat-work (used for house-walls and fences). *Raj.*

ছেঁদ (Skr. rt. ছিদ্ to cut), *s.*, a knife (for tapping date-trees). *Jess.*

ছেক্কা } ছেগা } = চেগা.

ছেনা (corrup. of *ছানা), *s.*, the young (of an animal); a kid.

ছেনালী (*ছিনাল), *s.*, illicit sexual intercourse, whoredom, immorality. *Raj.*

ছেনি (prob. corrup. of Skr. ছেদনী fr. ছিদ্ to cut, pierce). *s.*, a punch, awl; a chisel; a punch for punching stamps, *gen.*: a long narrowish straight dāo, *Dac.*

ছেনে, *s.*, refuse silk. *Raj.*

ছেফাত (Arab. سفاهت folly ?), *s.*, improper carnal intercourse. *Bog.*

ছেমড়িয়া (Skr. ছেমগড and ছমগড a fatherless orphan), s., a child that has neither father nor mother, an orphan child. *Chit.*

ছেমন, *s.*, the ground below the eaves of a house. *Dac.*

ছেম্ড়া (*perh. fr.* ছেমড়িয়া an orphan child, *and then generally*) *s.*, a boy, youngster, *E. Beng.* See ছাম্ড়া.

ছেম্লী (connected with ছেম্ড়া) *s.*, a girl, young girl. *E. Beng.*

ছেলা, *s.*, an aquatic weed. *Jess.*

ছেলে (for *ছেলিয়া), *s.*, a child. ছেলে পেলে children. [The diction. gives ছালিয়া পিলিয়া and says পিলিয়া is a jingle to the first word; but it no doubt = Uṛiya *pīlā*, a child, and may very probably be connected with the Telugu *pilakāya* and Tamil *pillei*, a child]. ছেলে মানুষ a young person (boy or girl).

ছৈলান, *s.*, wandering about. *Chit.*

ছোঁআ, *s.*, branches and sticks thrown into water (to prevent people fishing there). *Chit.*

*ছোট youngest (among sons), see মেজ.

ছোট, *s.*, a long (swift-going) boat. *24-Pargs.*

ছোটাছোটী (*prob. fr.* *ছুটিতে q.v.), *s.*, mutual abuse. *Dac.*

ছোট্কী (fr. *ছোট small; see ছুট্কা), *s.* (scil. wife), the junior or inferior (of two co-wives). *Mald.*

ছোট্ণা (with ধান), *adj.* (a kind of paddy) grown on high land (where the inundation in the rainy season hardly reaches). *Jess.*

জ

জ this letter has the sound of *j* generally throughout Bengal, except as a final (as in কাজ) where it is almost universally pronounced *z*. But in East Bengal it is very commonly pronounced *z* in all positions and the sound of *z* prevails over that of *j* in Chittagong, thus জানি "I know" is pronounced *zāni*; উজু "straight" *uzu*, Elsewhere it has a tendency to run into দ *d* especially at the beginning of a word. as দমাদ for জামাতা (Pers. داماد) a son-in-law, and these two letters are often confused in that position in Midnapore and Orissa, as দনার্দন for জনার্দন; যুজিষ্ঠির for যুধিষ্ঠির.

জওয়ান (Pers. جوان), *adj.*, strong (in health), hale. *24-Pargs.*

জওয়াল (*prob.* corrup. fr. *জল), *adj.* (?) জওয়াল কাদা water and mire. *Jess.*

জড়া (*prob.* fr. *জড় root, origin), *s.* (?) origin, beginning (?); with করিতে, *v.a.*, to begin, undertake, set to work upon (something). *Bardh.*

জড়ি (জড় root), *s.*, a small root, rootlet; a medicinal root, a root dried for use as a drug. *Mald.*

*জড়িতে, *v.n.*, to be wound around, be entangled (?): জড়িয়া পড়িতে to be entangled mentally, look confused, be out of countenance. *Howr.*

জননা (fr. Pers. زنانه female apartments), *s.*, a wife.

*জবদ (Arab. ضبط discipline, control, check), *s.*, repression, subduing: with করিতে to subdue, put one to trouble, punish.

*জমা (Arab. جمع accumulation, sum total, land assessment), *s.*, the amount of revenue or rental assessed upon land, *especially* a raiyat's rental; a raiyat's holding, the area for which he pays rent: জমি জমা raiyati land.

জমাই (জমা), *adj.*, subject to the payment of rental, rent-paying; appertaining to a raiyat's holding.

*জমাট, *adj.*, collected, gathered together. *Jess.*

জমি (Pers. زمين), *s.*, land, *espec.* cultivated land. The diction. gives জমী but it is becoming obsolete.

*জমিতে (Arab. جمع accumulation), *v.n.*, to accumulate, gather, assemble (as a crowd, or water when obstructed); to grow compact, become dense; to coagulate, congeal.

জমিয়ত (Arab, جمعيت collection), *s.*, জমিয়ত বস্ত a concourse of people, an unruly crowd, a mob.

*জয়, *s.*, victory, triumph *gen.*: জয় দেওয়া হাত a cubit increased by 4 fingers' breadth, *Khul.*

জরিত (*জরিতে to be dissolved in an acid), *adj.*, soaked (with anything), stained. *Dac.*

জল খরচ করিতে to wash one's self after going to stool. *Jess.*

জল খাইতে (and জল খাওয়া) to take light refreshment, to have a snack of food. জল খাইতে দেওয়া, *s.*, giving light refreshment. জল খাওয়ার সময় (among cultivators) the time for stopping work in order to have a snack of food, i.e. about 8 or 9 a.m.

জল গুণ্ড (=*জলগণ্ড), *adj.*, covered with water (as land), always submerged, marshy. *Jess.*

জল চরা shoal water, shallow water. *Jess.*

জল দিতে, *v.n.*, to leak (as a boat). *Nautical.*

জল পট, *s.*, the place where water dripping from a roof falls. *Raj.*

জল পড়া, *s*, the pronouncing of *mantras* over water (in order to purify it).

জল ভাঙ্গিতে, *v.n.*, to have (so much) draught of water (as a boat), e.g. নৌকা কত হাত জল ভাঙ্গে, how many cubits of water does the boat draw? *Nautical.*

*জলা (*জল), *s.*, marshy ground; low moist ground capable of growing rice; the fields, open ground, *C. Beng.*: level ground, a plain, *Jess.*; *adj.*, cleared (of jungle), opened out (as land), *Bak.*

জসম, *s.*, kind of armlet.

জহুরল (perh. জোড়ল, from Skr. জাঙ the chin), *s.*, a dewlap. 24-*Pargs.*

জাইম, *s.*, chin. *Chit.*

জাএতন্তর (prob. corrup. of জাত্যন্তর; জাতি+অন্তর a difference in caste), *s.*, removal from one's caste; disgrace to one's caste or family: with করিতে to ravish, violate (a woman). *Jess.*

জাওন corrup. of জাকন, q.v.

জাওয়াই=জাবাই, q.v.

জাঁতা (*যন্ত্র), *s*, a harrow (=মই). *Jess.*

জাকন, *s.*, the frame of bamboo or mat laid at the bottom of a boat (on which the cargo is laid). *Jess.*

*জাগ, *s.*, the steeping (of jute) in water. *Raj.*

*জাগিতে, *v.n.*, to awake, be awake, *gen.*: to return to existence, re-appear (as a char, after being submerged by the inundation of the rainy season), *Raj.*: to be fruitful, to produce crops (as land), *Bak.*

জাগির (a causal noun from *জাগিতে?), *s.*, a teacher, tutor. *Chit.*

জাঙ্গলা (*জঙ্গল), *adj.*, appertaining to the jungle; jungly, wild, uncouth; জাঙ্গলা কথা random talk, talk not to the point. *Jess.*

*জাঙ্গাল (Skr. জঙ্গাল a boundary-ridge in a field), *s.*, a boundary-embankment; an embankment used as a pathway, *C. Beng.*; a path, way, *Bak.*

জাটা, *s.*, spear. *Sylh.*

জাতান (জাত?), *s.*, details, particulars, items (in an account). *24-Pargs.*

জাতিয়ারি (*জাতি), *adj.*, relating to caste, appertaining to caste matters. *Raj.*

জান (*জঙ্ঘা the thigh), *s.*, the outside of the thigh. *Dac.*

জান পসন্দ (for *জান পহ্চান), *s.*, acquaintance, being acquainted with. *Dac.*

জানোলা (=*জানালা), *s.*, a window.

জাবড়াইতে (*connected with* *জাপ্টিতে to clasp in the arms), *v.a.*, to seize in both arms, to clasp around.

জাবাই (Arab. ذبح slaughter), *s.*, slaughter.

জাব্‌রা, *adj.*, coarse (paddy). *Bak.*

*জামাই, *s.* (1) a daughter's husband, *gen.*: (2) a sister's husband, *Dac.* ঘর জামাই a son-in-law who lives in his father-in-law's house (*the expression now implies inferiority or contempt*; *originally it meant apparently* a son-in-law virtually purchased by the father-in-law to reside with the daughter).

জামাল কোটা, *s.*, a kind of shrub. *Raj.*

জাম্না, *s.*, chaff, chopped straw (?). *24-Pargs.*

জালা, *s.*, sowing *rice* (*paddy*) *seed*, *Chit.*; জালা ফেলিতে to sow rice seed. *Chit.*

জালা, *s.*, a plot where rice (paddy) seed is sown for seedlings, a rice seedling-bed, *Dac.*; জালা বিচানা (*fr.* বিচি?), the same, *Chit.*

জালা, *s.*, a brother's wife. *Dac.*

জালাইতে (perh. fr. জালা a seedling-bed), *v n.*, to spring up, sprout forth. *Jess.*

জালি (*জাল a net), *s.*, a woven purse, closed at its mouth by drawing a thread. *Chit.*

জিআইতে=জিলাইতে. *Chit.*

জিউ (*জীব life), *s.*, life, soul. *Raj.*

জিঁয়ত (loc. case of pron. যাহা), *adv.*, in which place, where. *Chit.*

জিঙ্গলা, *s.*, a bamboo twig. *Tip.*

জিগাইতে, *v.a.*, to ask, enquire. *Bak.* Cp. জিঙ্গাইতে.

জিঙ্গাইতে (corrup. of *জিজ্ঞাসিতে), *v.a.*, to question, interrogate; to ask, enquire *E. Beng.*

*জিজ্ঞাসা, *s.*, a desire to know, wish to enquire; questioning, interrogating, *gen.*: with করিতে to question, interrogate, *gen.*: জিজ্ঞাসা বাদ, *s.*, questioning, interrog ating. *Chit.*

জিজ্ঞিতে (*fr.* জিজ্ঞাসা), *v.a.*, to question, interrogate. *Chit.*

জিত (*perh.* *জিত conquered, *or* Arab. ضدّ contrary) with করিতে, to persist, persevere. *Chit.*

জিদা, *adj.*, sent, despatched. *Chit.*

জিনাগারী (Urdu زنا کاری fornication), *s.*, improper carnal intercourse. *Bog.*

জিলাইতে (causal fr. জী life), *v.a.*, to cause to live, to make thrive; মাছ জিলাইতে to stock (a tank) with fish. *Chit.*

জিলিক, *s.*, lightning. *Jess.*

জী (see ঝী), *s.*, a daughter, *E. Beng.* জী পুত daughters and sons, children, youngsters, *Jess.*

জীন, *s.*, hope, expectation. *Mald.*

জুআচ্চর (*prob. corrup. fr.* *জুআচোর a cheat), *s.*, putting off with false excuses.

জুঙ্কা, *s.*, ear-ring. *Chit.*

জুঙ্গইর=জোঙ্গরা. *Chit.*

জুঙ্গরা=জোঙ্গরা. *Chit.*

জুতি, *s.*, a fishing-spear; a fishing harpoon with a single shaft and several iron-barbed heads; a bundle of small iron-barbed fishing darts bound together at the butt-ends (=কোঞ্চ). *Jess.*

জুনাক=জোনাক: জুনাক পহর a clear moon-lit night. *Tip.*

জুমাল, *s.*, yoke of a plough. *Chit.*

জুফা, *s.*, a bamboo split partially down opened out and fastened around with hoops, so as to form a round case for holding things. *Chit.*

জেবঘড়ী (জেব a pocket+ঘড়ী a clock), *s.*, a watch.

জেরবার (Pers. زیربار under a burden), *adj.*, responsible, liable. *Chit.*

জেরবারী (জেরবার), *s.*, ruining, breaking, injury. *Chit.*

জেরা, *s.*, examination of a party's witnesses by the adverse party, cross-examination.

জেরে (Pers. زیر under), *adv.*, under; after, subsequent to. *Bak.*

জোআর (*জুআর, Hindi জোআর; perh. fr. Skr. জ্বর the hot stage of fever), *s.*, the flood-tide (opp. to ভাটা the ebb-tide): জোআর দিতে to take the flood-tide.

জোআর, *s.*, a trench, rut. *Chit.*

জোঙ্গরা, *s.*, a kind of large hood or cowl made of leaves and bamboo (which is worn suspended from the head down the back as a protection from rain, while leaving the hands free). *Chit.*

জোত (also written *যোত: *fr.* যুক্ত? assigned—the portion of land assigned to a villager), *s.*, the portion of land held and cultivated by a resident villager; the land held by an occupancy-raiyat, *gen.*: (where the area has been large and the land fer-

tile, the *jot* has been sub-let, and so the word has come to mean) a tenure the lands of which are sub-let to cultivating raiyats, *Jess.*; *Pub. Note.* This word is probably not Sanskrit but indigenous; see Journal of the Bengal Asiatic Society, 1911, p. 486, note 9. The grant discussed there is a genuine one.

জোতকাটি, *s.*, cutting paddy close below the ears. *Mid.*

জোতদার (also written যোতদার; জোত+Pers. دار holding), *s.*, the owner of a *jot* (in all the meanings of this word).

*জোন, *s.*, a labourer, cooly: জোন খাটিতে to earn one's living by manual labour: জোন তুলিতে to make up a labourer's work-account.

জোন (*জ্যোৎস্না), *s.*, moon-light, moon-shine. *E. Beng.*

*জোনাক (জোন), *adj.*, illuminated by the moon, moon-lit (as a night) *gen.*: *s.*, moon-light, *Mald.*

জোনাকি (জোনাক), *adj.*, moon-lit. *Raj.*

*জোর (Pers. زور force), *s.*, force, strength, effort; violence, compulsion; hardihood, effrontery, e.g. জোর করি বলিতে to speak with a brazen face, *gen.*: *adj.*, strong, powerful, *Mald.*

জোর, *s.*, illicit sexual intimacy, liaison (=আশ্নাই). *Dac.*

জোরা (*perh.* connected with জোআর a trench), *s.*, a water-channel, small nullah. *Chit.*

জোলা (*জোল low moist land), *s.*, any depression in land where water settles; a watery hollow or trough in land; a channel, trench, ditch. *Raj.*

জোহর, *s.*, jungle, *Dac.* (a woman's word).

জোহর (Arab. ظُهر) *s.*, the time after midday when the heat is greatest, i.e. about 2 p.m. (one of the times of prayer among Mohammedans). *Chit.*

জ্ঞাঁতা (*prob. connected with* জ্ঞাতি a kinsman; *hence perh.* the original meaning was a "brother-hood") *s.*, a social faction or party (in a village). *Raj.*

জ্ঞাতা = জ্ঞাতা *Raj.*

জ্য, (jya), *adv.*, exactly, precisely; e.g. দুঅর (q.v.) জ্য exactly noon. *Chit.*

ঝ

ঝ has generally the sound of *jh*; but in East Bengal it is modified very much like জ *j* and is very commonly pronounced *z*; e.g. বুঝি "I understand" is pronounced *buzi*; মাঝি "the headman of a boat" *māzi*.

ঝট্‌পট (Skt. ঝ or ঋট *onomatop.* + পট *as a jingle*), *adv.*, suddenly, instantaneously; quickly.

*ঝড়, *s.*, storm, tempest, cyclone. *24-Pargs.*

ঝড়ি (*ঝড়), *adj.*, rainy; ঝড়ি সময় the rainy season. *Mald.*

ঝনাট (*onomatop.*), *s.*, the sound of a thing falling on the ground.

ঝন্ন (*onomatop*; *so also* *ঝনাৎ), *s.*, clatter, ring (of metal). *Dac.*

ঝপট্‌কে (connected with ঝট্‌পট), *adv.*, quickly, hastily, hurriedly. *Mald.*

ঝর, *s.*, after-birth. *Rang.*

ঝরা, *adj.*, ঝরা খাল a tiny khal, *24-Pargs.* ঝরা ঘাস unfruitful paddy that has sprung up self sown, *Dac.*

ঝরি, *s.*, any kind of litter slung on a pole, a dooly. *Mald.*

ঝলা, *s.*, a bairagi's alms-bag. *24-Pargs.*

ঝলি, *s.*, a closely-constructed *taṭṭi* (through which one cannot see). *Chit.*

ঝাইল, *s.* (1) leathern bag, leathern case, *Mald*; (2) a pit where water is baled out. *Hug.*

*ঝাউ, *s.* (1) the shrub Tamarix Indica; (2) the tree, Casuarina.

ঝাঁকা (perh. *fr.** ঝাঁক a crowd), *s.*, a large hemispherical basket (for carrying small articles); *Jess*; *24-Pargs.*

ঝাঁপি (connected with *ঝাঁপ and *ঝাঁপী), *s.*, a large round cane-made store-basket with a cover. *Jess.*

ঝাকি (perh. connected with *ঝাঁকিতে), *adj.*, ঝাকি জাল a circular fishing-net (thrown so as to fall in a circle on the water and sink). *Chit.*

ঝাড়া পোচা (*fr.* * ঝাড়িতে and পোঁচিতে), *s.*, *liter.* rubbing and wiping; applying medicines, medical treatment. *Dac.*

ঝাড়া ফুকা (*fr.* *ঝাড়িতে and ফুঁকিতে), *s.*, *liter.* rubbing and blowing, incantation, witchcraft. *Raj.*

*ঝাড়া, *s.*, a privy: ঝাড়া ফিরিতে to go to stool, to go aside to ease one's self. *Jess.*

ঝাপাইতে (*ঝাঁপাইতে), *v.a.*, to cover (something) with (something else). *Chit.*

ঝাপাইতে, *v.a.*, to cause (cattle) to wallow about in water, to allow them to disport themselves in water. *Dac.*

ঝাপি (*ঝাঁপিতে to overspread, as plants), *adj.*, overspreading. ঝাপি জঙ্গল, low jungle scrub

*ঝামা, *s.*, broken brick.

*ঝি, *s.* (1) a daughter; (2) a maid servant.

ঝলাই, *s.*, an open shell. *Dac.*

ঝী (ঝি), *s.*, a daughter,: ঝী বউ daughters and wives, the women-folk of a family. *Jess.*

ঝীম (*ঝিমিতে to nod with drowsiness), *s.*, nodding with drowsiness: ঝীম মারিতে to nod with drowsiness.

ঝুক দিতে, *v.a.*, to get before one, to anticipate one, get the start of one. *Chit.*

*ঝুড়িতে, *v.a.*, to cut, reap (pulse crops), *Mald*; to cut off, lop, trim off.

ঝুল (*ঝুলিতে to swing) *s.*, tugging to and fro, pulling about (as in a scuffle). *Jess.*

*ঝোড়া, *s.*, a very large basket (capable of carrying a man). *Raj.*

ঝোড়াই (ঝোড়া) *adj.*, contained in a *jhoṛā*. *Raj.*

ঝোর, *s.*, low ground. *C. Beng.*

ঝোর, *s.*, a small path. *Chit.*

ট

টক্‌টকাইতে (prob. from some vernac. root টক্; compare *আটক an obstruction), *v.a.*, to obstruct, hinder. *Chit.* Cp. ঠেকাইতে.

টঙ্কার, *s.*, tetanus. *Jess.*

টঙ্গ, *s.*, raised platform. *Sylh.*

টঙ্গিত (perh. corrup. fr. টঙ্কা money) *adj.*, টঙ্কিতা বাগীচা a garden temporarily leased out. *Dac.*

টট (ṭaṭa), *adv.*, rather quickly.

টট্টা, *s.*, bolt, bar (for fastening a gate). *Mald.*

টপ্‌কাইতে, *v.a.*, to leap over (a fence or wall); to climb over, to scale.

টপ্পর (connected with *টোপ, *টোপর, * টোপি), *s.*, the roof or covering (over a boat). *Mald.*

টব (Engl. tub), *s.*, flower-pot. *Hug.*

টহলুয়া (Hindi টহল house-work, drudgery), *s.*, a servant who does all the odd jobs in a kitchen. *Chit.*

টাইঁ, *s.*, certainty, precision, accuracy. *Mald.*

টাইট (corrup. of টাটি), *s.*, a fence. *Mald.*

টাঁড, *s.*, =ডাঙ. *Ch. Nagp.*

টাক (connected with টাঁকিতে to appraise), *s.*, estimate, reckoning, calculation (as of the crop on a field). *Jess.*

টাকিয়া, *s.*, stem of a tree, trunk. *Chit.*

টাগারি, *s.*, kind of wooden pail or cup. *Dac.*

টাঙ্গা, *s.*, hatchet, axe. *Sant.-P.*

টাঙ্গি, *s.*, axe, *Midn.*; *24-Pargs.*

টাট, *s.*, interstice in a mat wall. *Jess.*

টাটি: টাটি জমি common pasture land (=চটান). *Khul.*

*টাট্‌কা, *adj.*, fresh, new, recent; sound, unimpaired, *gen.*: clear, precise, exact, definite (as a recollection), *Mald.*

*টান (*টানিতে to pull), *s.* (1) a pull, tug, haul; (2) the strength of a stream, force of a current; (3) a violent tension, spasm; (4) attraction; (5) attraction of the feelings, affection, love; (6) demand (for goods), scarcity.

টান, *s.*, land, bank, shore. *Dac.*

টান *prob. nasalized form of* টার q.v. *Chit.*

টানা (*টানিতে to pull), *adj.* (1) pulled, stretched, extended, *gen.*; (2) far off, distant, *Khul.*

টার (*prob.* =ঠাউর q.v.), *s.*, recollection, remembrance. *Chit.*

টাল, *s.* (1) a wide expanse of open fields; (2) low, swampy ground; (3) a marsh, swamp. *Mald.*

টাল, *s.*, pile, heap. *Chit.*

*টিকা, *s.*, inoculation for small-pox, *gen.*: vaccination, *Chit.*

টিকিয়া (*টিকী ?), *s.*, small skull-cap (worn by Mohammedans). *Chit.*

টিকিয়া, *s.*, leopard. *Chit.*

টিকিরি দূকান, *s.*, a temporary stall or shop at a hāṭ. *Jess.*

টিপ (*টিপিতে), *s.*, a press or feel with the fingers. *Jess.*

টিপি (টিপ), *s.*, hinting by a sign or gesture. *Jess.*

*টিপিতে, *v.a.*, to press, squeeze, *gen.*; to press with the hand (so as to feel a thing), *Jess.*

টিয়াঁ (=টাকা), *s.*, rupee; money. *Chit.*

টিয়াঁ, *prep.*, used to indicate the ablative case. =হইতে. *Hug.*

টিলিয়া (from টীলা), *s.*, a jungly or grassy hillock. *Chit.*

টীপিতে (*টিপিতে), *v.a.*, to press, squeeze.

টীপ টীপ (*onamatop.*), *s.*, dripping of rain. *24-Pargs.*

টীলা (Hindi টীলা), *s.*, a hillock. *Chit.*

টুকিতে, (*prob.* *টুক a small bit, a little piece) *v.a.*, to jot down, make a rough note; to note, insert a note. *24-Pargs.*

টুঙ্গিঘর, *s.*, an outer-house in a bari, used as a baiṭhak-khāna. *Raj.* (see টেঙ্গি).

টুটি, *s.*, the back of the neck, the nape of the neck. *Raj.*

টুনি, *s.*, post, stake. *Chit.*

টুল (Engl. stool), *s.*, a low stool; a small bench.

টেও (=টেঙ). *Chit.*

টেঁউইয়া (perh. corrup. of ঠেলনিয়া pushing) with জাল a wedge-shaped fishing-net (pushed forward and downward). *Chit.*

টেক, (*prob. connected with* *ঠেক a hindrance: *the original meaning seems to be* "anything protruding or protuberant"), *s.*, a promontory, a tongue of land (in a river), *gen.*: lumpy places or irregularities (in a road), *Jess.*

টেক (=টা+এক) *particle implying* nearly, about, approximately, e.g. প্রহর টেক about a prahar.

টেঙ (*ঠেঙ্গ), *s.* (1) thigh, leg (of an animal), *Chit.*; (2) lower leg (of men), *Chit.*

টেঙে=ঠেঙে. *24-Pargs.*

টেঙ্গড়া, *s.*, an open fence (of upright and horizontal bamboos). *Chit.*

টেঙ্গড়াইতে, *v.a.*, to solicit, importune, urge. *Raj.*

টেঙ্গা (=*ঠেঙ্গা), *s.*, a stick, staff, *Purul.*; *Sant. P.*

টেঙ্গি ঘর, *s.*, baiṭhak-khāna, reception room, sitting-room. *Raj.* (See টুঙ্গি).

টেটা =ভেঙ্গরি. *Sylh.*

টেনা, *s.*, a rag, bit of cloth. *Mald.*

*টেপা (টেপিতে), *adj.*, pressed, squeezed; indented, *gen.*: pressed down, so টেপা ধান transplanted paddy, *Jess.*

টেপা, *s.*, a small pot, with a hole in the bottom (used in making salt). *Chit.*

টেপিতে (টিপিতে), *v.a.*, to press down. *Jess.*

টের, *s.* (1) notice, intimation, *gen.*; (2) clue, trace.

টেল
টেলিয়া } *s.*, branch of a tree. *Chit.*

টোকা (টুকিতে), *s.*, a note, note (in a book); a memorandum, abstract.

টোকা, *s.*, a kind of palm-leaf umbrella for the head. *Jess.*

টোঙ্গি, *s.*, a hillock. *Ch. Nagp.*

টোটা (*prob.* connected with *ঠোঁট a bird's beak), *s.*, a promontory (in a river). See ঠোটা.

টোনা, *s.*, knee.

*টোপ, *s.* (1) a dent, indentation, *gen.*; (2) a shallow circular pit (where shikaris sit at night to shoot wild animals), *Sundbn.*

টোপা=টোবা *Chit.* (*perh. connected with* *টোপ *above*).

টোপে, *adv.*, without, besides, beyond (=বাদে). *Mald.*

টোপ্রি (*টোপ a cover, hat), *s.*, a circular roof. *Mald.*

টোপ্পা corrup. of পোটলা. *Jess.*

টোবা (connected with ডোবা), *s.*, a small pond. *Chit.*

ঠ

ঠ This letter is always pronounced *th*; but after a vowel has a tendency towards *ḍh*; espec. in E. Beng., e.g. uḍhān for উঠান "a courtyard."

ঠগিতে (*prob. fr.* স্থগিত stopped, debarred), *v.a.*, to lose, fail in, be unsuccessful in (a thing). *Jess.*

ঠাইঁ (*corrup. of* স্থানে in a place) (1) *adv.*, in a place; *used with the pronom.* এ, ঐ, etc., *to form adv. of place*, e.g. এ ঠাইঁ here, *Mald.*; (2) *prep. used to give a dative or locative meaning*, e.g. ওর ঠাইঁ to him, in or with him.

ঠাইট করিতে, *v.a.*, to beat, give a thrashing. *Dac.*

ঠাউর (*prob. fr.* স্থাবর fixed, steadfast; *hence orig. meaning prob.* "fixing or determining a thing"), *s.* (1) looking carefully at, inspection, attentive regard, scrutiny, *Chit.*: (2) recognition, identification, *gen.*; (3) clear recollection, accurate memory, *Chit.*; (4) recollection, remembrance; (5) inference, deduction, conclusion; (6) opinion, conjecture: *gen.*

ঠাওর =ঠাউর. *24-Pargs.*

ঠাট (Hindi ठाट), *s.*, the frame work of a thatched roof. *Mald.*

*ঠাহর (Hindi ठहरना to be fixed, determined; *prob. connected with* ঠাউর q.v.), *s.*, consideration, determination; thought, reflection; opinion, fancy, *gen.* In *Chit.* its meanings blend with those of ঠাউর.

*ঠিকা (*ঠিক precise, exact), *s.* (1) a sum fixed, an amount settled, a sum agreed upon, *Raj.*; (2) a fixed price (for work to be done), fixed hire of labour, *Raj.*; *adj.* (1) working at a fixed hire; (2) working for daily hire, hired; (3) taking chance work, doing job-work; (4) working by chance, labouring temporarily; (5) temporary, undertaking for a time only (espec. with reference to the cultivation of land, e.g. জমি ঠিকা রাখি I hold land temporarily).

ঠিকা (*from last meaning of* ঠিকা *above*), *s.* (1) a temporary cultivator of land, the lowest grade of cultivators who have no permanent right in the land, a *karfā* tenant, *Mald.*; (2) name of a particular tenure in Jessore (*prob. orig.* one leased out at a fixed sum).

ঠিকাইতে=*ঠেকাইতে. *Jess.*

ঠিকাদার (*from last meaning of* ঠিকা *above*), *s.*, the holder of a ṭhikā, name of a particular kind of tenure-holder. *Jess.*

ঠিয়াঁ (corrup. of ঠাইঁ), *adv.*, in a place; *used with pronom.* এ, ঐ, etc., *to form. adv. of place*, e.g. এ ঠিয়াঁ here. *Mald.*

ঠেঁঠেঁ (corrup. of ঠাইঁ and ঠিয়াঁ), *adv.*, in places, here and there. *Raj.*

*ঠেকাইতে (*ঠেক an obstruction, hindrance), *v.a.* (1) to obstruct, hinder; (2) to oppose, prevent, resist; (3) to press against, exert pressure against; (4) to protest, remonstrate, forbid; (5) to stop, put an end to (a thing, as a quarrel); (6) to interpose, intervene; (7) to ward off, guard, protect.

ঠেকী (*ঠেক), *s.*, obstructing, hindering; opposing, resisting; protesting against. *Jess.*

ঠেঙে, *adv.*, with, beside, in the possession of. *24-Pargs.*

ঠেঙ্গ place? একঠেঙ্গে in the same place, in the same village. *24-Pargs.*

ঠেট্টা =চম্বল. *Chit.*
ঠেন (corrup. of স্থান), *s.*, a place, spot. *Mald.*
*ঠোকর, *s.*, a blow with the foot, a kick. *Raj.*
ঠোটা (*ঠোঁট a bird's beak), *s.*, a point or spur (of land), a promontory. See টোটা.

ড

ড this letter is always pronounced *ḍ* but constantly runs into ড় *ṛ* when not initial. In the common language it sometimes represents a দ *d*, e.g. ডামড়া *Dac. for* দামড়া a bullock; ডিহী a group of villages *fr.* Pers. ﺩﻳﻪ a village; ডি *for* দি direction: ডাইণ *fr.* দক্ষিণ.
ডক, *s.*, rain, a shower. *Jess.*
ডগ, *s.*, the principal shoot (of a plant), the top of the growing stem. *Mald.* See ডগা *and* ডোগা.
ডগ, *adj.*, low, low-lying (applied to land); low and fertile.
*ডগা (*prob. fr.* ডগ) *s.*, *adj.*, prominent, large.
§ডগা (ডগ, *s.*) *s.* (1) the principal shoot (of a plant, as a sugar-cane).; (2) the top of the growing stem; (3) a peak or tip; (4) the point or fore-part of anything.
ডগি (ডগ *adj.*) =ডগ *adj.*
ডগীনা (ডগি), *adj.* low-lying, subject to submersion by water (as land). *Khul.*
ডগ্গর (*ডগর), *s.*, a double drum. *Chit.*
ডগ্গা (ডগ *adj.*), *adj.*, = ডগ *adj.* See ডগীনা.
ডগ্গা = ডগ্গা.
ডর corrup. of ডহর. *Raj.*
ডরা (for ডহরা fr. ডহর), *adj.*, low, low-lying (applied to land). *Khul.*
ডল, *s.*, a flood. *Chit.*
*ডহর (Hindi ডহর), *s.* (1) a village road or path; (2) a low village-road, *Raj.*; *Mald*; (3) low land flooded with water; see দহা.
ডাউ, *nautical adj.* left (= বাম, *as opposed to* right); port (*as opposed to* starboard *in boats*). *C. Beng.*
ডাইণ, *s.*, a cultivated plot of ground. *Raj.* See ডাণ.
ডাইণ (*দক্ষিণ), *adj.* right (opposed to left).
ডাঁঅর = ডাগর. *Chit.*
*ডাকুআ (ডাকিতে to summon), *s.*, a peon, *Chit*; a postman; a guide.
*ডাগর, (*prob. fr.* ডগ *s.*), *adj.* full-grown, adult, mature; large (as an instrument), extensive (as an estate), voluminous (as papers): influential, respectable. *Bak.*
ডাগরা, *s.*, a pitcher (= কলসি.) *Sundbn.*
ডাঙ্গর = *ডাগর. *Bak.*
* ডাঙ্গা, (*prob. connected with* ডগ *s.*, ডাগর, ডাঙ্গর), *s.* (1) high ground (raised well above water or floods), *gen.*; (2) a river-bank, *gen.*; (3) high unculturable land, fallow land, *Mald.*; (4) the raised site of a bāṛi, a bhiṭā, *Midn. Note.* This word is very widely used as a final in forming the names of places.
ডাঙ্গি (*ডাঙ্গা q.v.), *s.*, plain, level land. *Jess.*

ডাড়া, *s.*, a water-course, streamlet: a branch or arm of a *jhil* or marsh. *Raj.*

ডাণ, *s.*, a cultivated plot of ground. *Raj.* See ডাইণ.

ডাণা, *s.*, the part of the upper arm just below the shoulder. *Jess.* See ডেণা.

ডাণ্ট (*দণ্ড), *s.*, a wooden handle (as of a dāo). *Mald.*

ডাণ্ড, *s.*, high ground (= ডাঙ্গা). *Ch. Nagp.*

ডাপ, *s.*, the cross-rafters in a kaccha roof. *Raj.*

*ডাবর (connected with *ডাব a young watery cocoanut ?) *s.* (*orig.* anything shaped like a cocoanut ?) a pitcher; a spittoon; a grass-purse to keep pān leaves in. *24-Pargs.*

ডাবা (*prob. fr.* *ডাব), *s.*, the pipe of a cocoanut hukka. *Dac.*

ডামস, *s.*, a channel left in a river between a char and the bank or between two chars, which becomes shallow or dries up in the hot season. *Raj.*; *Mald.*

* ডালা, *s.* (1) a large shallow basket; (2) a lid, cover, top, *gen.*; (3) a coarse mat, *Mald.*

ডালা (*fr.* *ডালা a basket ?), *s.*, articles prepared as offerings for idols. *24-Pargs. Compare English* 'hamper.'

ডালান (*ডালা), *s.*, a large basket for rearing silkworms. *Raj.*

ডাহিন (*ডাকিনী), *s.*, a witch. *Mald.* Also *ডাইন.

ডি (corrup. of দিগে? see দি) *prep.* = নিকট, কাছে: e.g. ওর ডি কহিয়াছি I have told him. *Dac.*

† ডিঙ্গাইতে (†ডিঙ্গিতে), *v.a.*, to leap, jump; leap over, jump over.

† ডিঙ্গিতে, *v.n.* (1) leap over, jump over; (2) to climb over, scale; (3) to frisk.

ডিঙ্গু (*ডিঙ্গিতে to leap), *s.*, a leap, a jump. *24-Pargs.*

*ডিহী (Pers. ﺩﻳﻪ a village), *s.* (1) a group of villages, a small district consisting of a group of villages, *gen.*; (2) a village cutcherry, a zamindar's village office, *Mald.*

ডুনা, *s.*, a fish-basket. *Chit.*

ডুব, *s.*, a funnel-shaped fish-trap. *Chit.*

ডুবা, *s.*, a bamboo hedge around a tank. *Chit.*

ডুবারি (*ডুবিতে to dive), *s.*, one who dives, a diver.

*ডুবিতে, *v.n.* (1) to go under water, sink under water, be immersed; (2) to plunge into water, to dive; (3) to sink, disappear (as the sun, moon, day-light, etc.).

ডুমা (*ডুমা a small piece), *s.*, a small cloth or scarf, a gāmchā. *Chit.*

ডুম্নী, *s.*, a ditch made by excavating earth to raise other land (পগার) alongside it. *Raj.*

ডুম্নী (*ডোমনী), *s.*, a female of the *ḍom* caste. *Dac.*

ডুরিয়া, *s.*, a fish-basket carried on the back between the shoulders. *Chit.*

ডুল = ডোল. *Dac.*

ডেঁআইতে
ডেঁআনিতে } *v.a.*, to drive (cattle). *Chit.*

ডেঙ্গা (connected with *ডাঙ্গা ?), *s.*, a wall of earth surrounding a bāṛi. *Chit.*

ডেণা, *s.*, the upper arm, *Raj.*; *Mald.*; the part of the upper arm just below the shoulder, *Jess.* See ডাণা.

ডেণা (corrup. of ডাইণ), *adj.*, right (opposed to left). *C. Beng.*

ডেরা, *s.*, a tent, *gen.*: a very small house, *Dac.*

*ডেলা (Hindi ডলা *and* ঢিলা), *s.* (1) a lump of earth, a clod, *gen.*; a round lump, a ball-like thing, e.g. চক্ষর ডেলা the eye-ball, *Dac.*

ডোওয়া, *s.*, the outside edge of the raised earth floor of a house (= মেড়). *Jess.*

ডোগা (ডগ *s.*), *s.*, the principal shoot of a plant, the top of the growing stem. *Mald.*

ডোঙ্গারা (ডোঙ্গা), *s.*, one who plies a ḍongā, one who rows a ḍoṅgā for hire. *24-Pargs.*

ডোড়া, *s.*, tooth-powder. *Mald.*

ডোড়া, *s.*, a net-purse. *Raj.*

ডোনা, *s.*, a fisherman. *Chit.*

ডোব (ডুবিতে to go under water), *s.*, low ground, a hollow. *Mald.*

*ডোবা (ডুবিতে to go under water), *s.* (1) a hollow or depression (in land) covered with water; (2) a pond, pool, *gen.*; (3) any hollow or depression in land; (4) a pit, ditch, *Raj.*; *Mald.*

*ডোম, *s.*, a ḍom, a low caste employed as scavengers, etc., *gen.*; a fisherman, *Chit.*

ডোমা (connected with ডুমা?), *s.*, a cloth with broad red border (worn by Mohammedans). *Chit.*

*ডোল, *s.*, a large deep basket or basket-like enclosure (in houses for storing paddy, rice, etc.). *E. Beng.*

ডৌলিয়া (*ডৌল fashion, manner), *adj.*, of a fashion, of a kind, like, e.g. কোন ডৌলিয়া of what kind? like what? *Chit.*

ঢ

ঢ this letter is always pronounced *ḍh*, but constantly runs into ড় *ṛh* when not initial.

ঢক, *s.*, figure, shape, make, appearance. *Jess.*

ঢম্বল, *s.*, an iron fishing-spear. *Chit.*

*ঢল, *s.*, a flood or rise of water (in a river) *Chit.*; the red and turbid waters from the upper countries flowing into the rivers of Bengal, *dict.*

ঢাকাঢাক্যে (ঢাকে), *adv.*, close by, very near. *Chit.*

ঢাকিয়া (*ঢাক a large drum), *s.*, a drummer. *Raj.*

ঢাকুয়া = ঢাকিয়া. *Raj.*

ঢাকে, *prep.* at the side, by the side. *Chit.*

ঢালন, *s.*, a small earthenware pot. *Jess.*

ঢালা, *adj.* ঢালা পথ an open public path. *24-Pargs.*

ঢালু (*ঢাল a downward slope), *adj.* sloping downwards. *Raj.*

ঢীল (=*ঢিল), *s.*, a brick-bat. *Pub.*

ঢেগ, *s.*, a large wide-shaped pitcher.

ঢেড় (=*ঢের), *s.*, a heap; plenty, abundance, lots, heaps: *adj.*, plentiful, abundant, more than enough; e.g. জল ঢেড় আছে there's heaps of water.

ঢেপা, *s.*, a marsh. *Chit.*

ঢেমসি (same as *ঢেমনী), *s.*, a kept mistress, a concubine. *Chit.*

ঢেরা, *s.*, a mark, sign (by a person who cannot write): ঢেরা সহি signature by means of a mark.

*ঢেলা. *s.*, a lump of earth, a clod, *gen.*: a brick-bat, *Pub.*

ঢোলক (*ঢোল), *s.*, a long narrow drum.

ঢোলাই (*ঢোলান), *s.*, conveying, carrying, transporting. *Raj.*

ত

ত this letter is always pronounced *t*.

তঙ্কি (*তঙ্কী from Arab. تنقيح investigation, enquiry), *s.* (with or without জরিপ) a small measurement of one or a few holdings (as opposed to a large general measurement); a partial measurement of a few plots (in order to test a full measurement).

তড়া, *s.*, fallow ground. *Bank.*

তড়ুয়া, *adj.*, situated on the bank (of a river), riverine; তড়ুয়া রাস্তা a road along the bank (of a river). *Sylh.*

তত্ত্ব তালাপী, *s.*, superintendence, supervision. *Dac.*

*তদন্ত, *s.*, a scope, object; an investigation, inquiry (=তদারুক), *gen.*

তদারুক (Arab. تدارك), *s.*, an investigation, inquiry, *espec.* a police investigation into a criminal complaint, *gen.*: care, attention, nursing, good treatment, *Raj.*

তল, *s.*, in composition takes the forms তল, তলা and তলী. -তলা has two meanings (1) = -তল, "what is beneath"; and (2) = -তলী, "shelter,"[3] or "vicinity": e.g. বটতলা "what is beneath the bat tree" (= বটতল); and "what is under the shelter of or in the vicinity of the bat tree" (বটতলী). *C. Beng.*

তন্দারি, *s.*, an investigation, inquiry (=তদারুক). *Jess.* See তুন্দারী.

তবক, (*perh.* Arab. طبق plate, leaf, disk), *s.*, a piece, portion (applied to land). *Bak.*

*তবু, *adv.*, *of time and argument* (1) then, *E. Beng.*; (2) yet, notwithstanding.

তব্‌লা, *s.*, a small rather heavy axe (= দব্‌লা). *Mid.*

তর (=তার পর), *adv.*, after that, afterwards. *Chit.*

*তরাইতে (causal of *তরিতে), *v.a.* (1) to cross (a person) over (a river, etc.), to ferry across, *Bak*; (2) to get (a person) over (a difficulty), to save.

তর্কা (Arab. تركة), *s.*, property inherited. *Chit.*

*তর্কারি, *s.*, (1) esculent vegetables; (2) spices; (3) curry.

তলই, *s.*, a large wide earthen pot. *Raj.*

*তলাইতে (1) to go to the bottom, to sink, *gen.*; (2) to be washed to the bottom, to diluviate (as land), *Jess.*; (3) (to put to the bottom) to darn, mend, fill in (a thin spot in a cloth), *Jess.*

তস্কী (*women's word*), *s.*, cause, reason. *Dac.*

তস্কীর (تقصير), *s.*, fault, sin, transgression.

তস্‌মা (Arab. تسمة leather thong or strap), *s.*, leather strap (for holding up a horse's leg when shoeing him.

তস্‌লা (=Hindi तसला), *s.*, a large low wide-mouthed brass pot (used for boiling; = বগ্গা). *Mald.*

তহরী (Arab. تحرير writing correctly, manumission), *s.*, a fee paid by a tenant to his landlord's amla (or the landlord himself) when closing the yearly account of rent (=হিসাবানা).

তহীদ (prob. corrup. of Arab. تحقيق ascertainment), *s.*, investigation, search, inquiry. *Dac.*

তাউই (*fr.* *তাত dear father ; *cf.* Hindi ताऊ a paternal uncle), *adj.*, like a father (applied to a person who has the same name as one's father), *Jess.* ; (2) a brother's or sister's or cousin's father-in-law, *Jess.* See তাওয়াই and তালুই.

তাউক (corrup. of তামাকু), *s.*, tobacco. *Chit.*

তাওয়া (*prob. fr.* তাইতে to heat), *s.*, a stage for growing melons on. *Jess.*

তাওয়াই (see তাউই), *s.*, a mother's brother's wife's brother. *Dac.*

তাঁড় see তাণ্ড.

*তাক (Arab. طاق a recess, shelf), *s.*, the top of the wall of a house where the thatched roof rests (used as a kind of secret shelf). *Mald.*

তাকাইতে (তাকিতে to look at, view), *v.n.*, to glance at, to look at, glance around, throw one's eyes upon, *Raj.* ; *Dac.*

তাগা (Hindi तागा, तागा a thread), *s.*. a waistlet. *Dac.*

তাগাতি, *adv.*, as far as, up to ; from. *Raj.*

তাগী (তাগা), *s.*, a waist-string (into which the dhoti is tucked.) *Pub.*

*তাড়, *s.*, a bracelet, bangle *or* armlet. *Its shape and the place where it is worn vary from district to district ; in Mald, Raj.* and *Chit. it is* an armlet for the upper arm.

*তাড়া (তাড়াইতে), *s.* (1) beating, chastisement ; (2) expulsion with blows, *gen.* ; (3) pursuing, chasing, 24-*Pargs.* ; (4) a roll *or* bundle (of papers) ; *see* তারা, 24-*Pargs.*

তাড়াইতে, *v.a.* (1) to expel with blows or threats ; (2) to drive away, *gen.* ; (3) to pursue, chase, 24-*Pargs.*

তাণ্ড, *s.*. high paddy land. *Ch. Nag.*

তান, *oblique case of* তিনি, *used as* accus. and genit. *gen.* : e.g. তান কইলাম I told him, *Chit.* ; তান জমি his land, *gen.*

তাপা, *s.*, a sudden thrust forward of the hand. *Jess.*

তাপা (*perh. fr.* Pers. تاب power), *s.*, sense, consciousness, presence of mind ; *e.g.* আমার তাপা ঠিক ছিল না I was not perfectly collected in mind. *Raj.*

তাবাইতে, *v.a.*, to smoothe down, to level, make flat. *Jess.*

*তাবীজ (Arab. تعويذ), *s.* (1) amulet, charm ; (2) a kind of ornament for the upper arm. *It varies in different districts, from* a small egg-shaped ornament for the neck or upper arm, *to* a band-like armlet.

তামারি (*perh.* connected with Hind. तम्बालु), *s.*, a small pot with a spout (= বদনা). *Dac.*

তামি, *s.*, a red-bordered cloth (worn by Mags). *Chit.*

তারা, *s.*, a roll *or* bundle (of papers) ; *see* তাড়া. 24-*Pargs.*

তাল, *s.*, a ball (of thread or tobacco).

তালাই (*fr.* *তল the floor ?), *s.*, mat, matting (made of bamboo, and used as a bed-mat). *Raj.*

তালুআ (তাল ?), *s.*, any flat surface of the body (e.g., crown of the head, palm of the hand, sole of the foot). *Chit.*

তাহুই (see তাউই), *s.*, a brother's or sister's or brother-in-law's or sister-in-law's father-in-law. *Mald.*

তাহুত (Arab طاعت devotion, obsequiousness), *s.* (1) attendance (on a person who is wounded or ill) ; (2) applying remedies (generally water and oil, to the wounds or to the head of a wounded person).

*তাহুত (Arab. تعهّد an agreement, contract), *s.*, an agreement, *gen.*; (2) a tahsildar's security-bond. *Chit.*

*তাহুতখানা (*fr. above* তাহুত + Pers. خانه a place, house), *s.* a hospital, dispensary. *The dict. erroneously derives this word from* Arab. تعهّد an agreement.

তিত্তিবার (*prob. fr.* pronom. root তদ্ that + বার a day), *adv.*, at that time, then. *Mald.*

তির, *s.*, a cross-rafter (in a kaccha roof). *Bog.*; *Chit.* See তীর.

তীর (তির), *s.*, a cross-rafter (in a kaccha or pakka roof).

তুঁত (for *তুত), *s.*, the mulberry-tree, *Raj.*; *Mald.*

তুন, *sign of the ablat. case* (= হইতে), from. *E. Beng.*

তুন্দারী, *s.*, supervision, superintendence. *Khul.*; see তন্দারি.

তুপিয়া, *s.*, a mound of earth (at the side of a field). *Chit.*

তুরঙ্গ, *s.*, a small tin box in a wooden frame. *How.*

তে (=সে), *pron.*. he, she, it. *E. Beng.*

*তেঁহ, *pron. honorific*, he, she. *E. Beng.*

তেতা = ভেঙ্গরি. *Sylh.*

তেমনি
তেমহনি } corrup. of তেমাথানি.

তেমাথানি (ত্রি three + মাথা head), *s.*, a place where three (roads or rivers) meet.

তেতিকিয়া (দ্বতীয় ?), *adv.*, three times, thrice. *Chit.*

তৈনতি (Arab. تعيينات appointment, deputation), *adj.* deputed, despatched, *Chit.*; a pāik, 24-*Pargs.*

তোওয়াইতে (*perh. corrup. of* তাকাইতে to glance), *v.a.*, to search, seek. *Chit.*

তোই, (*prob. corrup. of* তবে then), *adv.* (used interrogatively) then? what next? *Chit.*

তোক, তোক বাক্য consolation. 24-*Pargs.*

তোমরার (*genit. of* তোমরা you), *pron. plural*, of you, your. *Chit.*

তোমার (*pron.* your) an interjection commonly used during hesitation in speaking; এডা and গ্যা (gyā) are often added to it. *Jess.*

তোল (তূল), *s.*, a balance, a pair of scales.

তোলা (*perh. fr.* তুলিতে, to lift up, take up), *s.*, a cess, toll or market-due (levied on people who sell at a hāṭ or bazār); *sometimes* a percentage on the money realized by the sales, *Jess.*; *sometimes* a portion of the articles brought for sale, *Dac.*

ত্যেজিতে (?), *v.n.*, to wake, be awake. *Chit.*

*ত্রস্ত, *adj.* (1) frightened, terrified, *gen.*; (2) *adv.* quickly, *Dac.*

ত্রেদান: ত্রেদান রাইয়ৎ a head raiyat, a leading raiyat. *Jess.*

ত্বারা ত্বারি (Skr. rt. ত্বর্ to make haste), *adv.*, hastily, swiftly.

থ

থ this letter is always pronounced *th.*

থম (স্তম্ভ), *s.*, post, stake, pillar. *Chit.*

থাইঁ (স্থান), *s.*, place. 24-*Pargs.*

থাউড়ি (*থাড় erect), *s.*, a measure of height, that of a man with his arm stretched straight above his head. *Bak.*

থাকি (*for* থাকিয়া *fr.* *থাকিতে to stop, stay) *past particip. used as prep. of ablat. case*, from. *Chit.* (Its meaning is precisely similar to that of হইতে).

থাকিতে (*pres. particip. of* *থাকিতে to stay, stop) remaining. It is used, in an absolute construction, to denote anything remaining, e.g. বেলা এক দণ্ড থাকিতে "one daṇḍa of day-light remaining," "one daṇḍa before sunset."

*থাকিতে (rt. স্থা) *v.n.* (1) to stay, stop, pause; (2) to stay, remain; (3) to subsist, exist, be; (4) to continue, endure; (5) to dwell, reside; (6) *after prep.* সঙ্গে, to live with, cohabit with. The imperat. is often used as "be silent! be quiet!"

*থান (applied to cloth) plain, without pattern or colour.

থান: থান পাইতে to get notice (of a thing). *Chit.*

থানে *adj.*, foreign (=বেলাতি). *Jess.*

থিয়া (থীইতে to stand) *past particip. used as prep. of ablat. case*, from, than, etc. *Bak.* Its meaning is analogous to that of থাকি and থেকিয়া.

থিয়াইতে (causal of থীইতে), *v.n.*, to stand; to remain, wait. *Chit.*

থির (স্থির fixed) fixed, e.g. বেলা থিরের সময় "the time when day stands still," "noon." *Chit.*

থীইতে (Skr. rt. স্থা to stand and স্থির fixed) *v.n.*, to stand. সীধ হই থাও "stand upright." *Chit.*

থুকিতে, *v.a.*, to fasten (cattle) out with a rope (to graze), to tether (cattle). *Mald.*

থুনি (*perh.* *থুইতে to put down, place down), *s.*, a post (of a house). *Raj.*

থেকিয়া (= থাকিয়া and থাকি) *prep. of ablat. case*, from. *Chit.*

থেকে (থেকিয়া), *prep. of ablat. case*, from. *C. Beng.*

থোকা (*থোক, whole), *adj.*, whole, entire, aggregated; e.g. থোকা টাকা a big lump sum of money. *Raj.*

থোকা (corrup. of স্তোক little ?), *s.*, a note, memorandum, abstract (= টোকা). *Bak* .

থোড়া: থোড়া বাঁস a bamboo used for cleaning away weeds from *boro* paddy land. *Jess.*

দ

দ this letter is always pronounced *d*. It is confused with জ especially at the beginning of a word in Midnapore and Orissa; see note to letter জ.

দঅল corrup. of দখল q.v. *Chit.*

দইণ (দক্ষিণ), *adj.*, right (not left): south. *Chit.*

দওয়ালি, *s.*, belt. *Chit.*

দখল (Arab دخل entrance), *s.* (1) the entering into (a place); (2) the entering into possession (of a thing, especially of land), possession, occupation; (3) the intruding into (an affair), interference; (4) (metaphor.) the gaining of power (in a place), authority, influence, domination.

দছাদছি, *s.*, pulling one another, mutual pulling. *Chit.*

দজি, (*perh.* Arab. درجه station, degree), *s.*, the place where the second oarsman (reckoning from the prow) sits in a boat. *Mald.*

*দড়ী, *s.*, a cord, rope, string, *gen.*; a measure of length, equal to 12 or 13 cubits, *Jess.*

দণ্ড কারণ
দণ্ডেক কারণ } (দণ্ড a measure of time and) about a daṇḍa. *E. Beng.*

দদিয়া, *s.*, a person who mourns for a deceased person for the prescribed time and then shaves; a relative. *Mald.* (*vulgar*). *The* Hindi দদিয়াল pedigree, ancestors, *may be connected with this word.* See দায়েদী.

দন্ত, *s.*, short club. *24-Pargs.*

দব (connected with Hindi দবনা to be pressed down, to give way), *s.*, a slope, declivity: inclination, direction. *Mald.*

দবদব (fr. Skr. দব fire), *s.*, a bright gleam; দবদব করিতে to burn brightly (as charcoal). *Raj.*

দবনা, *s.*, the rump (*applied to cattle*). *Mald.*

দবে (দব), *adv.*, in the direction of, towards, e.g. পশ্চিমের দবে towards the west. *Mald.*

দব্‌লা, *s.*, a small rather heavy axe (=তবলা),. *Mid.*

দমাদ, (*for* *দামাদ *fr.* Pers. داماد), *s.*, a son-in-law.

দরকোলা (*prob.* দহর, q.v. *and* কোল, q.v). *s.*, a low piece of ground in the midst of jungle where the jungle is somewhat open and where water accumulates. *Bak.*

দরজোত (Pers. در written *and* জোত q.v.), *s.*, a holding under a jot; (*it may or may not be permanent, and may or may not be held at a fixed rental*). *Pub.*

দরদ্‌বন্দি (Pers. درد pain, sympathy *and* بند a band, tie), *s.*, one who feels for one, a relative. *Bak.*

দরবস্ত (Pers. دربست all, entire), *adj.*, all, entire (*applied to estates, as opposed to* কিস্‌মত a portion). *Bak.*

দরা (*prob. fr.* দহর), *adj.*, low, low-lying (as land). *Khul.*

দরা দর জোত (*prob. fr.* Pers. در within *and* দর জোত q.v.), *s.*, a holding under a dar-jot; (it may or may not be permanent, and may or may not be held at a fixed rental). *Pub.*

*দরুণ
দরুণে } (Pers. درون in, within), *adv.*, because of, by reason of, on account of.

দলাই, *s.*, kind of red-bordered chādar. *Dac.* (*Compare* Hindi দুলাই a veil or covering of two breadths used by women.)

*দলাদল = দলাদলি. *Jess.*

*দলাদলি (from দল a party, faction). *s.*, parties mutually opposed, factions: party-feeling, party-animosity, faction-strife, *gen.:* opposition, enmity, *Jess.*

দলিজ (Pers. دهليز a portico, threshold), *s.* (1) a portico; (2) a verandah outside a bari, used as a sitting room; (3) an outer shed, used as a sitting room or for worship. *24-Pargs.*; *Howr. It is used by Mohammedans and corresponds to* দালান *among Hindus.*

দল্যা, *s.*, salt in lumps or cakes. *Chit.*

*দশ *num.* ten. *In Jess. it frequently implies* (1) generality, universality, e.g. দশে *or* দশ জন *or* দশ জনা "ten men," "the majority" (of the village, community or caste), "most people"; দশ বার "often" (women's expression), *24-Pargs.*; (2) indefiniteness of a general kind, e.g. in relation to money, দশ টাকা কর্জ লও borrow some money, *Jess.* Cp. পাঁচ.

*দহ, *s.* (1) any hollow or cavity, e.g. হাত দহ করিতে to place both hands together so as to form a hollow (for carrying water, etc.), *Mald.*; (2) hollow ground, a marsh, swamp, *C. Beng.*; (3) an abyss, deep place in a river, eddy, *Dict.*

দহর (*apparently connected with* দহ), *s.*, path, village-road, *Raj. It seems to imply* hollowness *or* depression.

দহা (দহ), *s.*, marsh, swamp. *Jess.*

দাই (*for* দাবি), *s.*, a claim, lien. *Raj.*

দাই (*apparently connected with* দহ), *s.*, a cattle-track, foot-path (=হালট). *Jess.*

দাইর (দাই), *s.*, a tow-path, a path along the bank of a stream.

দাএল বালী, *s.*, a sort of beaded bālī (q.v.). *Chit.*

দাও (*দা), *s.*, a *dāo*, a bill-hook, cleaver, *Gen.*: শেওলি দাও a dāo for trimming leaves from date trees, 24-*Pargs.*: রাম দাও a kind of dāo, *Bak.*

দাওন, *s.*, a rope fastened between two posts to which rope cattle are tethered. *Dac.*

দাওয়া=দাওয়াই. *Hug.*

দাওয়াই, *s.*, the verandah of a kaccha house, the projecting earthen plinth covered by the projecting roof. 24-*Pargs.*; *Howr.*

দাওয়ালি (দাও), *s.*, a large heavy dāo. *C. Beng.*

দাওয়ালিয়া (*fr.* দাওয়ালি *or fr.* দাও+term. ওয়ালা), *s.*, hired labourers who reap a paddy crop and thresh it (and receive one-fifth, one-sixth, or one-seventh of it as wages). *Jess.*

দাঁ (corrup. of *দাঁড়), *s.*, an oar (a long shaft with a separate roundish blade fastened on to it). *Chit.*

দাঁড় (*perh. fr.* *দণ্ড), *s.*, the bank of a khāl. *Jess.*

দাঁড় দিতে (*with* গোরু), to tether (cattle) for grazing. *Raj.*

দাঁড় রাস্তা (*fr.* *দণ্ড), *s.*, a straight road, a large road, a highway. *Howr.*

দাঁড়া, *s.*, a water-channel; ভাসা দাঁড়া a channel for overflow-water, a surface-drainage channel. *W. Beng.*

দাঁড়ি (*fr.* *দণ্ড), *s.*, a sort of island enclosed between the two branches of a stream (not of char formation). *Jess.*

দাদুরা খাদুরা, *adj.*, uneven, rough, having ups and downs, having cavities and protuberances. *Jess.*

দাপা দাপি (*perh. fr.* দাপিতে to stamp), *s.*, rolling and tossing about. *Jess.*

দাবড়াইতে (*prob. connected with* *দৌড়িতে to run), *v.a.*, to run in pursuit, to pursue, chase. *C. Beng.*

দাবি (*দাবিতে to press down), *s.*, a downward slope. *Jess.*

দাবি (*দাবী *fr.* Pers. دعوي a claim, plaint), *s.*, a complaint, request, supplication; a claim, lien.

দাবিকীয় (দাবি), *adj.*, claimed, subject to a claim or lien. *Jess.*

দামড়ি গোরু (connected with *দামড়া a castrated bullock), *s.*, a cow that has never calved. *Tip.*

দামদ্রম, *s.*, a bit, a mite, a tiny piece

দায়েদী (*perh. fr.* দায় an inheritance), *s.*, a kinsman, relative, connexion (*vulgar*). *Jess.*

দার ঘর (*fr.* দ্বার door ?), *s.*, an out-house. *Jess.*

দারুআ (*দারু), *adj.*, made of wood, consisting of wood. *Chit.*

দালা (*connected with* *ডালা *and* *ডালি a basket containing a present), *s.*, a present. *Raj.*

দালান (*fr.* Pers. دالان a hall), *s.*, a small pakka house constituting a kind of hall in a bāṛi; a pakka hall used for worship and ceremonies; and so generally any small pakka building; a shed or verandah at the entrance of a bāṛi, used as a sitting-room. *C. Beng. This word is used by Hindus and corresponds to* দলিজ *among Mohammedans.* দরদালান or দ্বারদালান, *s.*, a pakka closed-verandah or pakka room without doors. *Jess.*

দালানি খাড়ু, *s.*, a kind of khāṛu or bracelet.

দাহাম, *s.*, side, party, faction (= দল). *Bog.*

দি (corrup. of দিক), *s.*, region of the sky, direction, side; e.g. পূব দি the east. *Also used advertially*, e.g. পূব দি eastwards; হেয়ান দি thither, there. *Chit.*

দিগো (corrup. of দিগর, Pers. دیگر other) *and* the others, *et* ceteri. *Jess.*

দিঘন (*from* দীর্ঘ), *adj.*, tall (applied to stature). *Raj.*

দিনমান, *s.* (*lit.* the day's measure) day-time. *Saugor Island.*

দিমু (fut. of দাওন) I will give. *Bak.*

দিয়াঁশলাই (*fr.* দীপ + শলাকা), *s.*, a match (for lighting). Haughton gives its corruption দেশলা.

দিশা মিশা (*from rt.* দিশ্ to point out; মিশা is merely a jingle), *s.*, certainty, accurate knowledge.

দু (*fr.* দুই two) *used especially in compound words*, two, twice, e.g. দুগুণা ছাওয়াল two children; দুমহল বাড়ি a bāṛi with two compounds. *General.*

দুঅর (corrup. of দ্বার), *s.*, door. দুঅর দিতে to shut a door. *C. Beng.*

দুঅর (*fr.* দ্বার, door ?), *s.*, verandah. *Mald.*; *24-Pargs.*; *How.*

দুঅর (দ্বিপ্রহর), *s.*, noon. *E. Beng.*

দুআলিয়া, *adj.*, non-resident (as a raiyat), pāekāsht. *Jess.*; *Bak.*

দুপাদুপি, pushing and pulling one another about. *Chit.*

দুব্‌লা, (connected with দুর্বা, dūb grass ?), *s.*, common grass. *Pub.*

দুমি, *s.*, beetle for ramming earth down. *Chit.*

দুর (corrup. of দূর ?), *interjection* (1) away! be off! be gone!; (2) extended to express feelings of repulsion, disgust, and impatience at stupidity.

দুরুণ (*fr.* দ্বার?), *s.*, door, door-way. *Jess.*

দুর্গাটেণী, *s.*, a very small beautiful crimson-headed bird. *Bak.*

দুলা, *s.*, a kind of play after a Mohammedan marriage. *Jess.*

দুলাই. *s.*, an unmade-up chaddar. *Raj.*

দূআ = দহা. *Jess.*

দূকানী (*fr.* দুকান, Pers. دُکان shop), *s.*, a shop-keeper. *Mald.*

দূধ (connected with দুধ milk), *s.*, a woman's breasts. *Mald.*

দূরিয়া (from দূর ?), *adj.* (as a cloth) having coloured lines running lengthwise, striped lengthwise. *Mald.*

দেও = দেবর, *s.*, a husband's younger brother; দেও পুত = দেবর পুত্র. *Jess.*

দেওয়া (*fr.* দিব্ the sky; or *corrup. of* দেবতা?), *s.* (1) the sky, the heaven, e.g. দেওয়া চিন্‌মিল করিল the sky flashed with lightning, *Raj.*; (2) thunder, rain, *Jess.*

দেওয়ানজী, *s.*, a name for 'mother-in-law' among Mohammedans. *Dac.*

দেওলে, *adj.*, insolvent. *Raj.* দেউলী and দেউলিয়া "bankrupt" are given in the dictionary; and the লে of দেওলে = the লিয়া of দেউলিয়া; hence the simpler form would be দেউলী or দেওলী.

†দেঙ্গুআ, *s.* (1) an unmarried person (man or woman), *especially* a bachelor, *Chit*; (2) a widower (Haughton).

দেবদুর্জুক (*fr.* দেব god; and ?), *s.*, a thunder-bolt. *Jess.*

দেব্বা, *s.*, a large pool left by the recession of a river. *Chit.*

দেম্নী (= ঢেম্নী), *s.*, a kept mistress, a concubine. *Dac.*

দেহুড়ি, *s.*, the house or room at the entrance of a bāṛi, an out-house. *Mald.* This= the Hindī deoṛī and ḍeoṛhī which mean "a threshold, door, gate, antechamber." The corresponding Beng. forms given in the dictionaries are দেহলি and দেহলী, which mean "a verandah, the ground in the front of the door, the rak (q.v.) in front of a house"; these words are said in Rāmakamala Vidyālaṅkāra's Prakritibāḍa Abhidhān to be derived from দেহ 'place of entrance' + লা 'taking hold of'; but this appears fanciful.

দৈবী (*fr.* দৈব fate; accident), *adj.*, uncertainly, not regularly, not always (applied to any act that does not take place regularly, but is subject to breaks). *Jess.*

দোআ = দহা. *Jess.*

দোআ = ভিট, bhiṭa (q.v.). *Jess.*

দোআ গরু (*fr.* *দোহ milking; milk), *s.*, a milch cow. *Jess.*

দোআইন্দা (?) (*fr.* دو and ۱۵ندہ ?), *s.*, a narrow path between two houses. *Chit.*

দোআধারা ঝলি, *s.*, a jhali (q.v.) made of split bamboos spread out and intertwined cross-wise. *Chit.*

দোওয়া, *s.*, an open spot in a jungle. *Dac.* See দোহা.

দোড়ি (= দড়ী), *s.*, a rope, cord, string; e.g. দোড়ি পাকাইতে to make a rope. *Jess.*

দোন, *s.*, a large khāl or creek on the sea-coast. *Bak.*

দোন *s.*, low land, being the best paddy land. *Ch. Nagp.*

দোনো (Hindī दोनों), *adv.*, twice, doubled. *Chit.*

দোপ, *s.*, a low place, depression, hollow. *Jess.*

দোপর (or দোপড় ?) (*fr.* দো and পট cloth?), *s.*, a thick chaddar. *Mald.*

দোপা (*fr.* দোপ), *adj.*, low, low-lying. *Bogra.*

দোপে (loc. of দোপ), *adv.*, below, at the foot of; e.g. বাড়ির দোপে below the bāṛi. *Jess.*

দোব্রা শাড়ী, *s.*, a wide-bordered śāṛi. *Dac.*

দোরা (*fr.* দুই), *adj.*, of double thickness, of extra thickness, of thick make (as matting). *Chit.* Cp. এরা.

দোস্রত, *s.*, fear, apprehension (vulg.). *Raj.*

দোহা (see *দহ), *s.*, a swamp, marsh, bil, collection of water. *Jess.*

দোহাতা (*fr.* দো two, and হাত the hand—because requiring both hands), *s.*, a large wooden mattock (used for hammering).

*দোহারা (*fr.* দো two) (1) *adj.*, double, two-fold, *general*; (2) *s.*, a pakka house consisting of a room and a verandah-room in front. *Howr.*

দৌজমি (দো *and* জমি), *s.*, land that produces two crops yearly (āus paddy and cold weather produce). *Bard.*

*দৌড়, *s.*, running, *general.* দৌড় দিতে to run, run away, *Dac.*; দৌড় মারিতে to run away, bolt off, *Jess.*

*দ্রোণ, *s.*, a square measure, = 16 kānīs = 27,000 sq. yds. = 16$\frac{7}{8}$ standard bighās. It is also used as a measure of length, = 16 linear kānīs = 720 yds. *Tip.*; *Chit.*

দ্বিতীয় বিবাহ = দ্বিতীয় সংস্কার.

দ্বিতীয় সংস্কার, *s.*, the first appearance of a woman's courses. [She then goes to live with her husband. See প্রথম সংস্কার].

ধ

ধক (or †ঢক), *s.*, weight.

ধঙ্গ, *s.*, make, fashion, shape. *Raj.*

ধজী (*fr.* ধ্বজ ?), *s.*, post, stake, pillar (as a landmark). *Mald.*

*ধন
*ধনমণি } *s.*, a euphemism for a boy's private parts. *Jess.*

ধর পড়াইতে, *v.n.*, to roll about on the ground. *Chit.*

*ধরণি (*fr.* ধরিতে), *s.*, the hand-rail of a sāko.

*ধরা (*fr.* ধরিতে), *past-particip. pass*, held retained; *applied to a stroke (as with a spear) in which the weapon is not let go.* *Jess.*

ধরাণি (*fr.* ধরিতে), *s.*, performing work for a neighbour on condition that the latter shall give his labour in return (= গাঁতা *Jess.*). *Raj.*

*ধরি (*for* ধরিয়া *fr.* ধরিতে; comp. *Engl.* 'touching') *verbal particip. used as a prepos.*, for; e.g. কত দিন ধরি for how many days? *Tip.*

*ধরিতে, *v.a.* (1) to hold; ধরা পড়িতে to be found, to be met with; (2) to bear (fruit): e.g., আম ধরিয়াছে it has produced mangoes, *Raj.*; (3) to hold up (as rain), e.g. ধরি যাইতে (sc. rain) to stop, cease; (4) to wave about (as burning straw, so as to get it into flame). *Jess.*; (5) to apprehend; (6) to find room enough; (7) to continue, remain.

*ধর্তা (*fr.* ধরিতে ?), *s.*, penalty, penal stipulation; excessive interest imposed as a penalty if a debt is not paid on the due date. *Raj.*

*ধর্ম্ম, *s.*, a close semi-religious relation or kinship formed voluntarily between two persons, who thenceforward behave to each other as if they are so related; e.g. ধর্ম্ম ভাই,, ধর্ম্ম মাতা etc., *general.*

ধর্ম্মঘাট (*fr.* ঘটিতে to unite, put together ?), *s.*, conspiracy, combination. *Hug.*

ধলা (*fr.* ধল white); (1) *adj.*, white; (2) *s.*, white powder, *Jess.*

ধাই (*fr.* ধাইতে to run, pursue ?), *s.*, = আক্রমণ. *Jess.*

ধাইতে (*fr.* root ধাব্ to run), *v.n.*, (1) to run; (2) run away, flee, *Chit.*; (3), *v.a.*, to pursue.

ধাইল, *s.*, eave of a house.

† ধাক্কা, *s.*, a push, a shove: *hence* the propelling force (of the flood-tide).

ধাপড়ি, *s.*, a reed, rush. *Mald.*
ধাপা, *adj.*, sultry. *Raj.*
†ধামা, *s.*, a cane basket (often hemispherical) for paddy. *Jess.*
ধামাইল, *s.*, a bamboo platform in a boat, (= মাচাইল). *Dac.*
ধারাইতে (*from* *ধারা, dropping, oozing), *v.a.*, to drop profuse watery foeces (applied to cattle). *Raj.* (Haughton gives ধেড়িতে with the same meaning—this would be a natural Central-Bengal modification).
ধারাণি (*fr.* ধারাইতে), *s.*, profuse watery foeces (applied to cattle). *Raj.*
ধারি, *s.*, open foot-path, foot-track. *Chit.*
ধারিয়া, *s.*, an otter.
ধারে (loc. of *ধার a loan), with কিনিতে to buy on credit. *24-Pargs.*
ধিক্‌ধিকি, *adj.*, fluttering, flickering (as a candle before going out): *applied to persons at the point of death.* *Dac.* [Compare *ধক্‌ধক the gradual increase of light.]
ধুঁআ, †ধুঁয়া } = †ধূঁআ (q.v.). *Chit.*
ধুপা, *s.*, washerman. *Sylh.*
†ধুম (1) *adj.*, heavy, thick, gross; (2) *s.*, ardour, zeal.
ধুমক (=Hindi ধমক), *s.*, threat, intimidation. *Raj.*
ধুলা, *s.*, or *adj.*, *meaning* something soft and yielding (like mud.) *Jess.*
ধূআন (*fr.* ধূম, smoke?), with দেখিতে to see dimly, see mistily. *24-Pargs.*
ধূঁআ (*corrup. of* ধূম). *s.*, smoke, vapour: with দিতে to fumigate.
ধূঁড়িতে (= Hindi ঢুঁঢনা), *v.a.*, to search for, seek. *Chit.*
ধূমাকল (*fr.* ধূম smoke, and কল engine), *s.*, steamer. *Mald.*
ধূল, ধূলা } *s.*, earth impregnated with salt.
†ধেঁড়ি, *s.* circular shield-shaped ear-ornament of filagree work. *Jess.*
ধেঁপ, *s.*, (*said to be*) a kind of lily. *Raj.*
†ধোকা, *s.* [(1) stratagem, deceit, illusion; (2) doubt, suspicion—Haughton] a scare-crow, anything put up to frighten wild animals away.
ধোতি (*prob. fr.* ধৌতি, from *rt.* ধাব্ to wash), *s.*, flood, inundation, cyclone-wave. *Bak.*
ধোন = euphemistic ধন (q.v.). *24-Pargs.*
ধোপ [or ঢোপ?], *s.*, weight.
ধোপ, *s.*, cough (as an ailment). *Jess.*
ধোপ (*connected with* ধবল?), *adj.*, white (= সাদা). *Chit.*

ন

This letter is commonly, and especially in C. Beng., confused with র and ল; as নাত for রাত night; রুক্‌সান for নুক্‌সান injury, damage. Initial ন is sometimes dropped, as ঈলাম্বর for নীলাম্বর.

ন, *adv.*, not. *Placed before the verb*: আঁই ন যাইয়ুম I will not go. তুই কিল্লে ন আইয় why did you not come? *Chit.* See না in *Chit.*

†ন (*for* নয়া new ?), *adj.*, the general appellation for the fourth out of 5 or more brothers. *24-Pargs.* See মেজ.

নইতে corrup. of রহিতে. *Jess.*

নউক (নখু), *s.*, finger-nail. *Chit.*

নওয়া (= নয়া), *adj.*, new: নওয়া খাওয়ার সময় the time of taking the first daily meal, about 9 a.m. *Jess.*

নওয়াদা, *s.*, jungle, jungly tract. *Mald.*

নঁদা = নদা. *Raj.*

নক with করিয়া = লক করিয়া. *Mald.*

নকরি, *s.*, an outer house. *Rang.*

নটা, *s.*, stalk, stem, caulm (of a plant). *Jess.*

নড় (see নড়িতে), *s.*, moving, moving away: নড় দিতে = নড়িতে: নড় মারিতে, to disperse, clear out, decamp. *Jess.*

†নড়াইতে (*fr.* নড়িতে), *v.a.*, to move away, cause to go off or go aside. *Jess.*

নড়া নড়ি (*fr.* নড়িতে ?), *adv.*, running, in haste.

†নড়িতে, *v.n.*, to move, shake, quiver, be agitated: to move aside, move away. [Haughton says the proper form is লড়িতে, *fr. rt.* লড্, which means 'to play, frolic; throw, toss'; but নড়িতে is the form which I have generally heard, and the primary idea seems to be 'the motion of dancing'; thus the two meanings would be 'dancing in one spot,' and 'dancing away.' The better derivation would therefore be the *rt.* নট্ to dance.']

নত্ (=*নথ), *s.*, a nose-ring.

নদা, *s.*, cow-dung cake. *Raj. Cp.* নাদ.

নন্দা = নোঁদা. *Raj.*

নয়ঞ্জলি, *s.*, a ditch or drain (beside a road), *Jess.*

নয়াঞ্জলি, *s.*, a ditch or drain (beside a road), *Jess.*: a narrow path (between two bāṛis) (?) *Raj.*

নরচর, *s.*, difference of opinion, want of unanimity. *Chit.*

নলিয়া, *s.*, flax. *Mald.* See নালিয়া.

নলুয়া (from নল), *s.*, mat-maker.

না, *interrogative after a negative, and placed at the end of the sentence;* তুই ন যাইবা না will you not go? *Chit.*

*না, *adv.*, no, not. না করিতে to deny; forbid, prohibit, prevent. *Dac.*

†না (*নৌ), *s.*, a boat (most general term in *Chit.*).

নাই (from না which is from নৌ a boat), *s.*, a boat, *Dac.* নাইর পুর (*crpt.* of উপর ?) on *or* in a boat, by boat, *Dac.*

নাইতে, *crpt.* for নাখিতে, which = রাখিতে. *Jess.*

*নাইতে, *v.n.*, to bathe.

নাই দোল, *s.*, a boat. *Dac.*

নাইওর, *s.* (a woman's) visiting or staying a short time at any bāṛi besides her husband's; *esp.* visiting at her parents' bāṛi. With নিতে, to take (a woman) away on such a visit. *E. Beng.*

†নাইয়া (*fr.* নাই), *s.*, a boatman, a rower, *C.* and *E. Beng.*; (2) the owner of a boat, *Pub.*

নাইয়া (*fr.* নাই because of its resemblance in shape ?), *s.*, the small iron anvil (used in shoeing horses). *Jess.* But see নিআই.

নাইল=আনিল, he brought. *Dac.*

নাইলা (*crpt.* of নালিয়া), *s.*, jute. *Dac.*

নাউ (*fr.* নৌ), *s.*, a boat, *Chit.*; নাউ আন (*crpt.* of নাউ খান) the boat, *Chit.*

নাকচাবি (*fr.* নাক nose and চাবী a key), *s.*, nose-key, a kind of nose-ornament. *24-Pargs.*

নাকমাচি (*fr.* নাক nose and ?), *s.*, a gold flower-ornament for the nose. *Raj.*

নাকা (=Hindi নাক্কা), *s.*, Police Outpost. *Raj.* Forbes says নাক্কা means 'the extremity of a road'; but in his Engl.-Hind. Dict., he gives it as the equivalent of a 'military, etc., post.'

নাকারি, *adj.*, like, resembling, of similar appearance. *Raj.*

নাকি (*fr.* নাক ?), *s.*, the eave of a house at the corner of the roof. *Jess.*

নাগল, *s.*, trace, clue, information (=সন্ধান). *Jess.*

নাঙ্গল, *s.*, plough, *gen.*; নাঙ্গল বাইতে to drive a plough, *Jess.*

নাঙ্গলিয়া (*fr.* নাঙ্গল), *s.*, a harrow (=মই). *Pub.*

নাচি (*fr.* নাচিতে), *s.*, dancing. *Chit.*

নাঠা (*fr.* নষ্ট ?), *adj.*, inferior, worst (applied to land). *Sundarbans.*

নাঠি=লাঠি, a stick. *Dac.*

নাড়, *s.*, a mistress, leman (=দেমনী). *Jess.*

নাডা (*fr.* নদ্ধ ?), *adj.*, bound, fastened (as a door). *Chit.*

নাড়ানাড়ি বৈষ্টব a low-caste baishṇab (as distinguished from a গৃহস্থ বৈষ্টব, who worships Viṣṇu in especial, but otherwise observes all the customs of brāhmans and kāyasthas. *Hug.* Also বামাৎ বৈষ্টব.

†নাড়িতে (caus. of নড়িতে), *v.a.*, to move, move from one place to another. *Jess.*

নাড়িতে, *v.a.*, to dry, dry in the sun. *Raj.*

নাত জামাই (*fr.* নাতিনী and জামাই), *s.*, the husband of a grand-daughter. *24-Pargs.*

নাতিন (*নাতিনী), *s.*, grand-daughter. *Chit.*

†নাদ (cp. নদা), *s.*, the excrement (of cattle). *Chit.*

নান্দ, *s.*, a gamla, large earthenware basin. *Hug.* (=মেছলা).

নাব (nāba, *crpt.* of §নাম *fr.* নামিতে to descend ?), *adv.*, under, beneath. *Hug.*

নাবা (*fr.* †নাইতে to bathe), *s.*, bathing. *Hug.*

নাতী (*নাতি), *s.*, grandson.

†নাবাল (*fr.* নাব), *adj.*, low, low-lying (as land). *24-Pargs.*

নামা (verb. n. *fr.* নামিতে), *s.*, descent, descending. নামা উঠা descent and ascent, a passage for descending from and ascending to (a building or place). *Raj.*

নামাইতে, *v.n.*, to purge. *Bak.*

নারাজ (*fr.* নারাচ an iron arrow ?), *s.*, an iron blade (?). নারাজের ভাঙ্গিনী the curved part of the blade of a sickle, just above the handle.

নারিয়া (নাড়িয়া ?), *s.*, the side of the buttock. *Raj.*

নাল, *s.*, one of the minor shafts of a juti (q.v.). *Jess.*

নাল, *adj.*, cultivable, arable (as land). *E. Beng.*

নালিয়া (*fr.* নাল tubular stalk of a plant?), *s.*, jute. *E. Beng.* See নলিয়া.

নালী (cp. লাল), *adj.*, rice-growing; নালী জমি paddy land. *Khul.*

নাশী, *s.*, a drain, *Chit.* (*crpt.* of নিকাস?).

নিআই (*নিহানী through *নেহাঈ), *s.*, an anvil. *Chit.*

নিআলাইতে (Hindī নিকালনা), *v.a.*, to draw out, pull out, take out. *Chit.*

*নিকাশ
নিকাষ
*নিকাস } (*perhaps from root* নিক্কষ্ to draw through—cp. Skt. নিকর্ষণ an open space, a court—*or from* root নিকাশ্ to shine in *or* through: thus the original meaning would have been "the drawing through," "opening out of a passage," or "the letting light through"), *s.* (1) the removal of an obstacle; (2) a thoroughfare (as a road), *Mald*; (3) a small drain, gutter, *Dac.*; (4) the clearing up of an account, *gen.*

নিকাহ (Arab. نِكَاح; নিকা is the form given in the dictionaries), *s.*, a second or subsequent marriage (among Mohammedans); (a euphemism for) concubinage. নিকাহ বসিতে to contract a second marriage (said of the woman). *E. Beng.*

নিকাহিতা (from নিকাহ by false analogy of past. pass. participle), *adj.* (a woman) married by the নিকাহ form.

নিক্কেশ, *s.*, breath. *Jess.*

নিগ্‌ঘাত (for *নির্ঘাত), *adj.*, without appearance of life, as if dead, lifeless. *Jess.*

নিচ্চয় (*crpt.* of নিশ্চয়), *adv.*, with certainty, positively, exactly. *Chit.*

নিছান, *adj.*, pulled out. *Chit.*

নিজ্জস (=নিজ্জাস), *adj.*, clear, positive, certain. *24-Pargs.*

নিজ্জাইতে (*crpt.* of নীদ যাইতে), to go to sleep. *Mald.*

নিজ্জাস (=নিজ্জস), *adv.*, clearly, truly, accurately, *Jess.*; excellently, very well. *Chit.*

‡নিড়ন (*fr.* নিড়িতে), *s.*, a hoe. *Jess.*

†নিড়াইতে (caus. of নিড়িতে), *v.a.*, to weed (the ground). *Jess.*

†নিড়িতে, *v.a.*, to pull out weeds, to weed.

নিবুড়, *adj.*, full, complete? নিবুড় স্বত্ব absolute ownership (of property). *24-Pargs.*

*নিরামিষ (নিস্+আমিষ), *adj.*, without flesh: but (a meal) containing no fish, *Maim.*

নিশ্চপি, *adv.*, secretly. *Jess.*

নিহাজ (?), *s.*, tail. *24-Pargs.* See †নেজ.

নিহাল, *adj.*, rich, wealthy. *Jess.*

*নীচে, *adv.*, *used adjectively*, low, low-lying (applied to land). *Khul.*

নীদ (*fr.* নিদ্রা), *s.*, sleep, নীদ যাইতে (or crptly নিজ্জাইতে) to go to sleep. *Mald.*

নীম (*fr.* নিম্ন), *adj.*, low, situated low. *Raj.*

নীয়ে (=লইয়া and Urd. لیے?), *adv.*, because (used at the end of a sentence to qualify it). *Sylh.*

নীলা (*নীল), *adj.*, blue. *Chit.*

নীর্ষা (*fr.* নীরস), *adj.*, of poor quality, less productive, inferior (applied to land). *Khul.*

নুড়া (*fr.* †নুড়), *s.*, straw rolled up into a small ball. *Jess.*

নুনু (cp. নোনা), *s.*, penis. *24-Pargs.*

নূড়া (=নুড়া), *s.*, a bunch (as of straw). *Mald.*

নূড়ি, *adj.*, damaged, broken, e.g. নূড়ি ইট broken or damaged brick. *24-Pargs.*

নূণ (=†লোণ), *s.*, salt.

নূণা (*fr.* নূণ), *adj.*, salt, saline, *Gen.* : *s.*, inundation of the sea, storm-wave, *Chit.*
নূতি=রূতি. *Jess.*
নেওড় (*fr.* †নেও), *adj.*, low, depressed, low-lying. *Tip.*
নেওয়াল (*fr.* †নেও), *s.*, a hollow or trough (in land). *Raj.*
†নেজ, *s.*, tail. See নিহাজ.
নেড়েয়া (=†নেড়্যা ; *fr.* *নেড়া), *adj.*, bald-headed (applied contemptuously to Mohammedans, because they shave their heads). *Jess.*
নেপ (=†লেপ), *s.*, a thick garment. *Hug.*
নেপ্‌টা নেপ্‌টি (*fr.* লপ্‌টিতে), *s.*, struggling together.
নেবিতে (*নামিতে), *v.n.*, to go down, descend. 24-*Pargs.*
নেল্‌পা (cp. লেল্‌ফা), *s.*, semen virile. *Bog.*
নৈচে, *s.* the pipe that bears the chilam of a hukka. *Jess.*
‡নোড়া, *s.*, stone roller used in grinding spices. *Chit.* (= পুতা).
নোঁদা = নোদা. *Raj.*
নোদা, *s.*, a stick coated with cow-dung and used as fuel. *Raj.* See নন্দা and নদা.
নোনা (cp. নুণু), *s.*, penis. *Mald.* From নন্দ ?
নোন্দা = নোদা. *Raj.*
নৌড় = দৌড়, *s.*, running, নৌড় দিতে = দৌড় দিতে to run, run off *or* away ; to chase. *Dac.*
নৌড়িতে = দৌড়িতে to run. *Dac.*

প

This letter is often pronounced like ফ in Chittagong.
পএলা, *s.*, a stick for driving cattle, a cattle-goad. *Mald.* ; *Raj.*
পওয়া (crpt. of প্রভাত), dawn, e.g., পওয়া লাগিতেছে it is just dawning, *Jess.* পওয়াঁতে *loc. case*, at dawn, *Chit.*
পওয়াইতে (*fr.* পওয়া), *v.n.*, to dawn ; e.g. রাত পওয়ায় the night is turning to dawn, it is dawning, *Chit.* রাত পওয়াতে after the night turned to dawn, 24-*Pargs.* Cp. পোআইতে.
পওয়াল (= †পোআল), *s.*, straw. *Jess.*
পঁহাত (crpt. of প্রভাত), *s.*, dawn, day-break. *Mald.*
পগার (*fr.* Pers. پیغار a ditch, furrow), *s.*, a ditch, trench. *Cent. Beng.*
পগার *s.*, land, the level of which has been raised artificially. *Raj.*
পঙ্গ, *s.*, semi-cylindrical mat-covering over a boat. *Chit.*
পচিতে (*fr. rt.* পচ্), *v.n.*, to rot, putrefy ; decay. পচা *past. pass. part.*, rotten, decayed.
*পঞ্চম, *s.*, a pañchāit. *Jess.*
†পটকান, *s.*, seizing and throwing (a person) down. *Dac.*
†পটল, *s.*, vegetables. পটল খেত vegetable garden. *Jess.*
পটিতে (cp. †পটাইতে), *v.a.*, to go in, enter. *Chit.*
পটুআ, *s.*, one who does paint-work, a painter. 24-*Pargs.*
পড়ন, *s.*, division (of char lands among the landlords.) *Bard.*
পড়ায়, *s.*, side, part. *Jess.* =পাড়া.
পড়িতে, *v.n.*, to fall : (after a noun with prep. পর) to assault, attack.
পতি (crpt. of পৌত্রী), *s.*, a son's daughter. *Raj.*
*পতিত, *adj.*, fallow, uncultivated (as land).

পত্তন, *s.*, the settlement of a raiyat on land : জমি পত্তন the settlement of land: বাড়ি পত্তন the settlement of a bāṛi : পত্তন দিতে to lease out, settle.

পত্তনীয়া (*fr.* পত্তন), *adj.* (raiyats) who have been settled on land, *Gen :* non-resident, pāekāsht (holding under karsha raiyats), *Jess.*

পথারা (*fr.* পথ), *s.*, path, way, track. *Bak.*

*পদ, *s.*, is used as a determinative particle, like খান, খানা, and গোট. *Dac.*

পন্দর, *s.*, the bottom of a bottle.

পণা (*fr.* পর্ণ leaf ?), *s.*, vegetation that grows on the surface of a tank. *Chit.*

*পবন, *s.*, breath. *Raj.*

পয়গার = পগার. *Jess.*

পয়স্তী *s.*, reformation of land, alluvion. স্বস্থল পয়স্তী reformation of land which had been diluviated on its old site, *Raj.*

†পর (*crpt.* of *উপর ?), *prep.*, on, upon. *Jess.*

পর (*crpt.* of *বর ?), *s.*, husband. *Jess.*

পরক with করিতে, *v.a.* to store up. *Chit.*

পরশ (*crpt.* of পার্শ্ব, পার্শ্ববর্ত্তী ?), *s.*, a neighbour. *E. Beng.*

পর্শী (*fr.* পরশ), *s.*, a neighbour.

পরস (*crpt.* of প্রসব), *s.*, child-birth, delivery. *Dac.*

‡পরামাণিক, *s.*, a barber.

পরওয়ার (for পারওয়ার ?), *adj.*, penetrable, permeable (as a hole or tunnel). *Jess.*

পর্ণিয়া, *adj.*, paying a fixed produce-rent (irrespective of the actual yield of land). পর্ণিয়া প্রজা a raiyat who pays such a rent. পর্ণিয়া ধান the fixed quantity of paddy so paid. *Mald.*

পর্দা (*fr.* Pers. پرندہ flying ?), *s.*, a butterfly. *Jess.*

পর্‌দাদা, *s* , a father's father. *Bak.* (*fr.* উপর + দাদা ?).

পল (connected with *পলাল ?), *s.*, straw. *C. Beng.*

পল (pala). *Chit.* = পলু, kind of basket.

পলাতকা (*fr.* পলায়িত + ক), *adj.* (land or a house) from which the tenant has fled, abandoned, deserted.

পলি (connected with পলল mud ?), *s.*, silt. *Mald.*

পলু (cp. Hindi पिल्लू a worm. Haughton gives পলু পোকা which is pleonastic), *s.* (1) a silk worm ; (2) a silk-worm cocoon. *Mald. Raj.*

পলু, *s.*, a basket, hemispherical in shape, with a small mouth at the top of the hemisphere (used in fishing). *Jess.*

পলুআ, *s.*, pillau. *24-Pargs.*

পশত (*crpt.* of *স্পর্শ) placing both hands together with the palms hollowed (as for the purpose of carrying something). *Mald.*

পষ্ট with দিতে, *v.a.*, to ill-treat. *Jess.*

*পসন্দ with করিতে to approve, assent to, agree to, consent to.

পসর, *s.* (1) light (= আলো) ; (2) moonlight ; (3) blaze, flame. *Chit.*

পসল আসল, *s.*, talk, gossip ; rumour, report. *Jess.*

পহর = পসর. *Chit.*

পহাইতে (connected with পহর ?), *v.n.*, to sit near a fire and warm one's self.

পহি } s., drain, ditch. *Mald.*
পহী }

পাই (short for পাইকাস্ত a raiyat who does not reside on his land, cp. Hind. पाह), *s.*, the surname 'Pāi,' e.g. Paṇḍit Pāi. *Raj.*

*পাইক, *s.*, a tahsildari peon.

পাইকর (*cp.* *পাইকার, Hind. पैकार and Pers. پایکار; the original meaning seems to have been one who carried on a trade on foot, a travelling seller), *s.* (1) a hawker, petty dealer, retail dealer, *Raj.*; (2) a dealer in large quantities, a wholesale dealer, *Jess.*; (3) a commission agent, e.g. কোয়ার পাইকর an agent who receives sums of money from a Silk Factory and makes advances to silk-worm rearers, *Raj.* *Used adv.*, in large quantities, wholesale, *Jess.*

পাইঙ্গোর (*fr.* পা foot, and ?), *s.*, a kind of anclet. 24-*Pargs.*

পাইট, *s.*, a day-labourer, cooly, *Raj.*; পাইট খাটিতে, *v.n.*, to work as a cooly, *Raj.*

পাইট *adj.*? slightly open, ajar. পাইট করিতে, *v.a.*, to put a door ajar, *Dac.*

পাইটালি (*fr.* পাইট), *s.*, the occupation or condition of a pāiṭ. *Raj.*

পাইড়, *s.*, a cross-beam (in a house). *Jess.*

পাইতা (*fr.* পাইতে), *s.*, a kind of rent receipt, *Maim.*; cp. Uṛiya pāuti.

পাইর (for পারি), *s.*, the coloured border of a cloth. *Pub.*

পাইল্যা (for §পালিয়া), *s.*, a large pot for boiling food. (= হাঁড়ি). *Jess.*

পাউই, *s.*, bamboo post of a verandah. *Raj.*

পাউঁরিয়া (*fr.* পাওঁ), *s.*, foot-path. *Mald.*

পাউড়ি, *s.*, the rim, edge (as of a well): the space or ground between a road and the ditch alongside; the mud portion of the bank (of a river). *Jess.*

পাএ (*fr.* *পা), *s.*, foot. পাএর তালী footsteps, 24-*Pargs.*

পাএবস্তা (*fr.* *Pers.* پایبستہ), *adj.*, alluvial. *Chit.*

পাএরা (*fr.* পাএ), *s.*, anclet. *Mald.*

পাএরা (*fr.* পাএ), *s.*, foot-path. *Mald.*

পাওঁ (*fr.* *পা), *s.*, foot.

পাঁচ, five. It is used to express: (1) combined generality of a superior quality, e.g. যা পাঁচ জন বলে "what five men say," *meaning the concurrent opinion of the better qualified men*; (2) varied generality, e.g. পাঁচ রকম গাছ আছে "there are trees of various kinds"; গাছ পাঁচ রকম মারা গিয়াছে "the trees have died in various ways." Cp. দশ.

*পাঁচন, *s.*, driving of cattle? 24-*Pargs.*; পাঁচন বাড়ি a staff for driving cattle.

পাঁচনি, *s*, a goad for driving cattle. 24-*Pargs.*

পাঁচিল (*fr.* *প্রাচীর), *s.*, a wall around a bāṛi. 24-*Pargs.*

পাঁজ্‌রা (*fr.* *পঞ্জর), *s.*, side (of the body). *Bog.*

†পাঁশ্ } (*fr.* *পাঁশু), *s.*, dust, ashes. *Raj.*
পাঁসু }

*পাক, *s.*, cooking, *Gen.* পাকসাক cooking, *Chit.*

†পাক, *s.* (1) a circular motion, e.g. পাকচক্র a whirlpool; (2) making the circuit (of anything), e.g. going around in a pond, *Jess.*; (3) causing a circular motion, twist,

turn, e.g. পাক দিয়া ফেলিতে to seize, turn round and throw down, *Mald.*; (4) enveloping in a circular way, a clasp, e.g. পাক দিতে to seize (a person) around with one's arms, *Jess.*

পাক (= ফাক aperture, interval, separating space), *s.*, separation, split, *Chit.*; e.g. মেলা পাক হইয়ে there was a split in the assembly (or party). *Chit.*

পাক (পক্ষ) *s.*, a (bird's) wing. *Chit.*

পাকড়া (*fr.* †পাকড়িতে), *s.*, seizing, catching hold of; arresting. *Raj.*

†পাকড়িতে (*fr.* পাক clasping ?), *v.a.*, to seize, lay hold of. The original meaning being to clasp ?

পাকা (*fr.* পাক), *s.*, a twist, turn. *Mald.*

*পাকিতে, *v.n.*, to grow grey (as hair).

পাখী, *s.*, one and a half bigha : equals 8 gaṇḍās in *Maim.*

পাগার (= পগার), *s.*, land the level of which has been raised artificially. *Rāj.*

পাঙ্গাশ, *adj.*, pale, pallid. *Raj.*

পাঙ্গি
পাঙ্গোই } *s.*, an oar (made of one piece of wood). *Chit.*

পাচ, *s.*, পাচের বাদ excommunication. পাচের বাদিত excommunicated. *Sylh.*

পা চালী (*fr.* পা foot and চালিতে to cause to move), *s.*, sauntering along, walking slowly with no object. *Jess.*

†পাছ (*fr.* পশ্চ), *s.*, the back part (of anything).

পাছান (*fr.* †পাছ), *adj.*, behind, hinder. *Mald.*

*পাছে (loc. of পাছ), *adv.*, back, backwards. *E. Beng.*

পাছে (for পাছিয়া ? *fr.* † পাছ), *s.*, the stern (of a boat). *Chit.*

পাজন, *s.*, a long stick for driving cattle. *Dac.* Cp. পাঁচনি, পাঞ্চনি.

পাঞ্চনি, *s.*, a goad. *Jess.* Cp. পাজন.

পাঞ্চল্লা, *s.*, assembly, gathering (for purpose of discussion). *Chit.*

পাঞ্চির (*fr.* প্রাচীর), *s.*. wall, fence-wall.

পাঞ্চিল (= পাঞ্চির), *s.*, fence around a bāṛi.

পাঞ্জর (*fr.* *পঞ্জর), *s.*, rib, side. *Bard.*

পাঞ্জা, *s.* (1) a load, bundle; (2) heap of bricks, *Pub.*; (3) brick-kiln, *Raj.*

পাট (*fr.* পত্র ?), (1) *s.*, jute; (2) a determinative particle used in connexion with the names of ornaments, e.g. এক পাট বাজু 'one armlet,' *Mald.*

পাট, *s.*, wall (of a house), mud-wall. *Mald.*

পাটনি (= † পাটনী), *s.*, a ferryman, ghāṭwālā.

পাটা, *s.*, flat stone (on which spices are ground and prepared). *Chit.* (= শিল).

পাটা, *s.*, a waist-belt (ornament). *C. Beng.*

পাটি, *s.*, the two pieces of bamboo that form the sides of maï or harrow. *Raj.*

†পাটি, *s.*, bamboo-matting, *Jess.*; fine mat. *Raj.*

পাট্‌কেল, *s.*, old brick (such as are extracted from a building). *Jess.*

পাট্‌নি (*পাটনী), *s.*, a ferryman. *C. Beng.*

*পাঠ, *s.*, superscription of a letter, the portion containing the name of the addressee. *Raj.*

পাঠাল, *s.*, edge, margin. *Raj.*

পাড় (fr. পাহাড়), *s.*, embankment round a tank. *E. Beng.*

‡পাড় (connected with *বাড় edge, margin; or with পার further bank?), *s.* (1) edge, margin; (2) bank, shore; (3) side, border; (4) border or margin (of cloth); (5) a pattern or stripe along the border (of cloth).

পাড়ই, *s.*, fisherman. *Jess.*

পাড়া. *s.*, buffalo. *Raj.*

পাড়া, *s.*, heap, pile, stack. *E. Beng.* Cp. পাদা, পারা, পালই.

†পাড়াইতে (caus. of পাড়িতে), *v.a.* (1) to cause to fall or come down, bring down to the ground; (2) to tread down, trample, *Tip.*; (3) to pluck, gather (flowers or fruit), *Gen.*; (4) to imprecate, invoke, e.g. গালাগালি পাড়াইতে to imprecate abuse, revile, *Raj.*

পাড়াপাড়ি (*fr.* †পাড়িতে?), *s.*, struggling together. *Raj.*

পাড়ালিয়া (*fr.* *পাড়া), *s.*, the inhabitant of a pāṛā. *Chit.*

পাড়ি (*fr.* পাড়), *adj.*, having a border, having a pattern or stripe along the border (of cloth), e.g. নীলপাড়ি ধুতি a blue-bordered dhoti. *Jess.*

*পাড়িতে (caus. of পড়িতে?), *v.a.* (1) to cause to fall down, throw down, bring to the ground; (2) to pluck, gather (flowers or fruit); (3) to imprecate, invoke, e.g. গালি পাড়িতে to abuse, *Raj.*

পাড়িয়া = পাড়ি.

*পাণ (*fr.* পর্ণ), *s.*, the pāṇ plant; its leaf. পাণ খাইতে দিতে (*lit.* to give one pāṇ to eat) to give one some reward, to give one something good, *Mald.*

পাণ্টি, *s.*, a small stick for driving cattle. *Bog.*

পাণ্ডা (see পান্দা), *s.*, back, back part, e.g. পাণ্ডার ভাগে at the back, behind. *Hug.*

পাতর, *s.*, the fields. *Rang.* See পাথার.

পাতল, *s.*, clump, cluster; পাতল পাতল in clumps. *Chit.*

পাতা, *adj.*, low, small, e.g. পাতা জঙ্গল, low (grass) jungle. *Chit.*

†পাতি (connected with পাতা?), *adj.*, small, puny. পাতি শিয়াল. a jackal, *Bak.*

†পাতিতে, *v.a.*, to throw down, cast down; spread out (on the ground); to place down, lay, set, fix (as a trap or fishing net).

পাতিল (*fr.* * পাত্র?), *s.*, a pot: a large pot = হাঁড়ি, *Raj.*: a low pot = ঢেপা, *Chit.*

পাথার, *s.*, open ground, open field. *Mald.* See পাতর.

পাথারি, *adj.*, situated crosswise, transverse. *Chit.* Cp. পাথালি.

পাথারিয়া = পাথারি. *Chit.*

পাথারী (*fr.* *পথ path?), *s.*, a small embankment (generally composed of three layers of small blocks of earth, the two lower layers being two blocks broad and the uppermost only one block). *Jess.*

পাথালি, *s.*, or *adj.*, holding anything horizontally in both arms. *Raj.* Cp. পাথারি.

পাদা, *s.*, heap, pile, stack. *Mald.* Cp. পাড়া, পারা, পালই.

পান (*fr.* পাইতে?), *s.*, boat hire. *Chit.*

‡পান, *s.*, side, direction. পানে towards, *Hug.* Cp. পার, পাল, পাড়.

† পান্তা, *adj.*, laid up for future use (applied to rice cooked). পান্তা ভাত rice cooked and kept for use till the following day. পান্তা খাওয়ার বেলা about 9 a.m.

পান্দা, *s.*, behind, back part. *Hug.*

পাপ, *s.*, the portion (of a bamboo or sugar-cane) between two knots or joints. *Dac.*

পার, *s.*, side. *Dac.* Cp. পাড়, পান, পাল.

পারওয়ার (*fr.* পার, the further bank), *adj.*, penetrating from one side to the other, passing completely through. *Jess.*

পারা, *s.*, a touch, contact (with anything). *Dac.*

পারা *s.*, a heap, pile, stack. *Dac.* Cp. পালই, পাড়া, পাদা, পালা.

†পারা, *s.*, quicksilver, mercury. (*fr.* Skt. পারদ).

পার্বণী (*fr.* পর্বণ), *adj.*, relating to a festival: *s.*, a fee paid by villagers to chaukīdārs and others on the occasion of a festival. *Raj.*

পাল, *s.*, a sail, sail-cloth: a small kind of tent.

পাল, *s.*, side, direction. *Chit.* Cp. পান, পার.

পাল (*pron.* pāla; = *পালা a time or turn in rotation?), পাল দিতে to lend or borrow ploughs in turns among neighbours. *Jess.*

*পালই, *s.*, a heap, pile, stack, *Bard.*; a rick of paddy with its straw. Cp. পারা, পাড়া, পাদা, পালা.

পালওয়ারি (pālwāri), *s.*, a kind of large deep saucer (of metal). *Raj.*

†পালঙ্গ, *s.* (1) out-house, house in the outer bāṛi (for the accommodation of persons not members of the family), *Mald.*; (2) sort of bedstead. Cp. পালেঙ্গা.

†পালা, *s.*, heap, pile, stack (as of straw). *Cent. and N. Beng.* Cp. পারা, পালই.

পালা, *s.*, a post (of a house). *Tip.*

পালা, *adj.*, *tame.

পালাঙ্গ (pālāṅg), *s.*, threshing-ground, a clear spot in a bāṛi where grain is threshed. *Rāj.*

পালান, *s.* (1) a piece of ground inside or adjacent to a bāṛi, where paddy seed is sown and whence it is afterwards transplanted, (this is also called বিছুরা), *Dac.*; (2) the land immediately adjoining a bāṛi on whatever side, *Jess.*; (3) field, *Dac.*

*পালি, *s.*, a bale (of cotton). *Chit.* Cp. পালই and পালা and পালী.

পালিতে (*fr.* পলাইতে), *v.n.*, to flee. *24-Pargs.*

* পালী, *s.*, heap, pile, stack. *Bard.* Cp. পালি.

পালেঙ্গা, *s.*, shed in which cattle are tied up, cow-shed. *Jess.* Cp. পালঙ্গ.

পাল্লা, *s.*, distance, range (e.g. of a shot). *Mald.*

পাষ, *adj.*, wide (= চৌড়া). *Dac.*

*পাহাড়, *s.* (1) a hill, mountain; (2) a hillock, *Chit.*; (3) embankment round a tank, *W. Beng.*

পাহারা (*fr.* প্রহর), *s.*, keeping watch or ward (as the Police).

পাহারাওয়ালা, *s.*, a policeman, constable.

পিচা, *s.*, twisted straw used for sweeping. *Dac.*

পিছ্‌কূল (*fr.* †পিছা and কূল), *s.*, the back, behind, rear part. *Chit.*

‡পিটিতে, *v.a.* (1) to beat, strike, hammer, *Gen.*; (2) to beat or hammer smooth (as the ground), *Chit.*; (3) (metaphor.) পিটিয়া আসিতে to follow behind, follow after, *Mald.*

পিট্‌পিট (from পিটিতে), *adv.*, immediately after, close along with.

পিদিম (*crp.* of পিদীপ), *s.*, lamp (of any kind). *24-Pargs.*

পিদীঁপ (*crp.* of প্রদীপ), *s.*, lamp (of any kind). *Jess.* পিদীঁপ লাগাইতে to light a lamp.

পিদুঁপ = পিদীঁপ. *Jess.*

পিল্‌পায় (prob. crp. of 'pillar'), *s.*, pillar, post (as a boundary mark); sign-post, notice-post (as the notice-boards of the Forest Department).

পীছ মোড়া বন্ধন fastening (a person's hands) behind his back. *Chit.*

পীছন (*fr.* †পিছা), *s.*, the back room (of a house). *Jess.*

পীট (pīṭa), *s.*, a kind of rice-cake. *How.*

পীড়ন see পীরণ.

পীড়া (*fr.* পিঠ: = †পিড়া and †পিঁড়া), *s.* (1) the part of the raised floor of a house outside the house, the outside edge of the raised floor, *Dac.*; (2) a verandah (in a kaccha house), *Dac.*; *Jess.*

পীপা (crp. of 'pipe'?), *s.*, a cask.

পীপ্‌ড়া
পীপ্রা } (*fr.* পিপীলিকা), *s.*, a large ant.

পীরক, *s.*, a nail (of iron).

পীরণ, *s.*, a short coat (resembling a shirt).

পীরা see পীড়া.

পীল = পিল্‌পায়.

পুআইত্যা (prob. *fr.* প্রভা; see পোআইতে) about 4 a.m. *Chit.* See ফইঁত্যা.

পুউর (crp. of পুখুর), *s.*, tank. *Bak.*

†পুঁটুলি, *s.*, a bundle. *Hug.*

পুকুর a causeway (across a lake or marsh)? *Jess.*

পুখুর (crp. of পুষ্করিণী), *s.*, a tank.

পুঙ্গি (Burmese phungyi), *s.*, a Mag priest (unable to read or write). *Chit.*

পুঙ্গী, *s.*, a bastard woman. *Sylh.*

†পুড়া *s.*, a sack. *24-Pargs.*

পুণি (crp. of পুষ্করিণী), *s.*, a tank. *Chit.*

পুতা, *s.*, a stone roller (used in preparing spices), *Chit.* = নোড়া.

পুতি, *s.*, a very small button. *Dac.*

†পুতিতে, *v.a.* (1) to put into the ground, plant (as trees); (2) to bury; (3) to drive or knock into the ground.

পুতকুর (*fr.* পুত্রিকা?), *s.*, image, idol. *Jess.*

পুত্রা (*fr.* পুত্র), *s.*, a younger brother's wife's sister's son (vulgar). *Dac.*

পুনঃপ্রশ্ন (*fr.* পুনঃ and প্রশ্ন), *s.*, re-examination (in law), examination by a party of his own witness after cross-examination by the adverse party.

পুপতি crp. of উপপতি. *Jess.*

পুয়াইত্যা see পুআইত্যা. *Chit.*

পুরল, *s.*, the top of a wall over which there is thatch. *Hug.*

পুরুষিয়া (*fr.* পুরুষ), *adj.*, male. *Jess.*

পুলিন্দা, *s.*, a packet, parcel, small bundle. *Raj.*

পূছ (Hindi পূছ), *s.*, question, interrogation, enquiry, *Chit.*; পূছ করিতে to ask, question.

পূছার (*fr.* পূছ; or পূছ + কার) = পূছ *Chit.*

পূন, *s.*, lime-pit, lime-kiln. *Chit.*

পূপতো (*fr.* পূপা), *adj.*, descended from one's father's sister. *Chit.* পূপতো ভাই father's sister's son.

পূপা, *s.*, father's sister, paternal aunt. *Chit.*

পূপ্ছাল (crp. of পূর্ব্ব চাল ?), *s.*, the part of Sātkāniya, east of the hills, in Chittagong. *Chit.*

† পূব (*fr.* পূর্ব্ব), *adj.*, eastern; পূব দিগ or পূবে দিগ the east.

পূরণ (*fr.* পুরাণ), *adj.*, old, ancient. *Bak.*

† পেঁক (*fr.* পঙ্ক), *s.*, mud, mire, dirt. *Tip.*

পেকাটি (for পাকাটি, crp. of পাটকাটি), *s.*, jute-stalk. *24-Pargs.*

পেচিতে, *v.n.*, to be delayed (?).

পেছন } (*from* পিছা; পেছুন is the more common), *adj.*, behind, hinder. পেছুন, পেছুনে and
পেছুন } পেছন দিগে, *adv.*, behind, in the rear of.

*পেট, *s.* (1) the belly; (2) the womb; পেটের সূত্র the vagina; (3) pregnancy, the foetus; তার পেট ছিল (vulgar) she was with child.

‡ পেটরা (*fr.* পেট ? cp. English 'chest'), *s.*, any strong receptacle, chest or case of country fashion; (e.g. a leather case, a cane chest covered with leather).

পেটাও (*fr.* পেট ?), *adj.* It appears to be literally equivalent to শিক্‌মি (q.v.) and is applied to land-tenures under and within other tenures, as পেটাও তালুক a dependent taluk. It is often vulgarly modified to পেটারা. *Bak.*

† পেটারা (*fr.* পেটরা), *s.*, a cane box or chest. *Dac.* See পেটাও.

পেড়ী, *s.*, mud, mire; *adj.*, muddy, swampy (applied to land). *Jess.* Cp. পেরী.

পেড়ুআ, *s.*, a basket for collecting cow-dung (= ওরা). *Chit.*

পেয়াল (connected with †পোআল ?), *s.*, dry grass of paddy. *Chit.*

পেরা (crp. of পাএরা), *s.*, footpath. *Mald.*

পেরী, *s.*, mud, mire. *Jess.* Cp. পেড়ী.

পেলে, *s.*, a cup or small basket made of close-set cane (used as a measure). *Jess.*

পেশাকার } *s.*, a prostitute, harlot.
পেশাগর }

পৈঁচে } (prob. for পঞ্চিয়া *fr.* Pers. پنجه), *s.*, an ornament for the wrist, a wristlet.
পৈঞ্চ্যা }

পৈঠা, *s.* (1) steps at the entrance of a house, *Gen.*: (2) a verandah (in a Bengali house), *Bog.*

পৈত্য করিতে to resume one's meals after recovery from severe illness. *Raj.*

পোঅর, *s.*, straw. *Raj.* Cp. পোআল.

পোআ (from পোলা), *s.*, a boy, lad. *Chit.*

পোআইতে (prob. fr. প্রভা), *v.n.*, to become light, to dawn; e.g. রাত পোআই গেল dawn broke. *Raj.* Cp. পওয়াইতে.

পোআত (crp. of পথ ?), *s.*, path, road. *Jess.*

পোআন (*fr.* †পোড়াইতে ?), *s.*, a potter's kiln or furnace. *Raj.*

† পোআল, *s.*, straw. Cp. পওয়াল.

পোইঞ্চি (*fr.* পৈঞ্চ্যা), *s.*, a kind of wristlet (= রেয়াল). *Chit.*

পোঁচাইতে } (*fr.* পোচ), *v.a.*, to cut in a sawing manner with a sharp weapon. *Cent. and*
পোঁচিতে } *E. Beng.*

†পোঁতিতে, *v.a.* (1) to put, place or fix in the ground; to plant; to bury.

† পোকা, *s.* (1) an insect, any kind of small creeping or flying thing, *gen.* (2) a worm; রাঙ্গা পোকা (euphemistically, to avoid using the plain name) a tiger, *Sundarbans.*

পোকে (= পোকা ?), *s.*, a snake. *Chit.*

পোচ, *s.*, a sawing cut with a sharp instrument; the mark of a sawing cut. *C. and E. Beng.*

পোচা (= পচা) rotten. *Dac.*

পোছ (= পোচ). *C. and E. Beng.*

পোছিতে = পোঁচিতে. *C. and E. Beng.*

পোটিয়া, *s.*, the ground below the eaves of a house. *Jess.*

পোট্‌লা (=*পোট্টলী), *s.* (1) a lump, bunch, cluster; (2) a bundle, packet; (3) the covering of a bundle.

পোড়াঘাটি (*fr.* †পোড়িতে and ঘাট), a burning ghāṭ, burning ground. *Raj.*

† পোড়াইতে (caus. fr. পোড়িতে), *v.a.*, to cause to burn, to burn.

† পোড়িতে, *v.n.*, to burn.

পোতা (*fr.* পৌত্র), *s.*, son's son, grandson. *Raj.*

পোতা (*fr.* Pers. نوطه ?), *s.*, a case, receptacle (e.g. in which scales are kept). *Raj.*

† পোতা, *s.*, a dhoti. *Tip.*

পোতা (*fr.* পোঁতিতে), *s.*, the earthern foundation of a kaccha house. = ভিটা.

পোন for পোআন. *Raj.*

পোন, *s.*, the buttock. 24-*Pargs.*

পোয়াতি (*fr.* পো, a son ?), *adj.*, pregnant.

পোয়াল = পোআল.

পোলা, *s.*, a boy, lad. *Chit.*

পোল্‌টা = পোট্‌লা. *Jess.*

পোষ, *s.*, jute. *Dac.*

† পোস্তা, *s.*, a buttress. *Mald.*

প্রথম সংস্কার, *s.*, a girl's marriage, the performance of the marriage ceremony. [She does not go to live with her husband till the দ্বিতীয় সংস্কার (q.v.)]

প্রবীন, *s.*, rush of water, strong current. *Jess.*

প্রমাণিক, *s.*, the head of a party or faction (দল) in a village. *C. Beng.*

প্রলাব (= প্রলেপ), *s.*, plaster. *Pub.*

*প্রহর, *s.*, a watch of the day or night, consisting of a fourth part of either or about three hours, and reckoned from sunrise and sunset: দুই প্রহর mid-day, noon; ছোট দুই প্রহর a little before noon.

প্রামাণিকী (*fr.* *প্রামাণিক), *s.*, the status of a prāmāṇik, the position of an arbitrator (as in a sālis).

ফ

This letter often represents a প in Chittagong.

ফঁআরে, *prep.*, with, along with, together with. *Chit.*

ফইতিয়া (*পইতা), *s.*, a brahman's sacred thread. *Chit.*

ফইঁত্যা, *loc. case.*, early in the morning, before day-break. *Chit.* See পুআইত্যা,

ফকি, *s.*, penis (boy's slang). *Bog.*

ফক্কি (*পক্ষী), *s.*, a bird (general term). *Chit.*

ফক্‌ষীন (Santāli ?), *s.*, a witch. *Mald.* = ফুষ্‌কীন.

ফদ্দ (পদ্‌ম), *s.*, lotus. *Chit.*

ফর, *s.*, light *generally* (of lamp, torch, etc.) ; চান্দের ফর moon-light (but for sun-light, see রোহিত). *Chit.*

ফর (*পর), *s.*, a feather. *Chit.*

ফরক (Arab. فرق), *adj.*, separate, different. *Chit.*

*ফরষা (see ফর্ষা), *s.*, early dawn. *Jess.*

*ফর্তেক (প্রত্যেক), *adv.*, singly, every. *Chit.*

ফর্মা (*fr.* English 'form'), *adj.*, made in a form or mould (as, good bricks). *Raj.*

ফর্মাশী (for ফর্মাইশী = Pers. فرمائشي), *adj.*, prepared to order.

ফর্ষা, *s.*, light, luminosity, early dawn, *Mald.* : *adj.* (1) luminous, bright (as dawn), *Mald.*; (2) light-coloured, *Raj.*; (3) clear, pellucid; (4) bright, clean (as clothes), *Mald.*

ফল with দিতে, *v.a.*, to have one's revenge, to pay one out (a grudge). *Raj.*

ফল্‌তি, *s.*, large bamboo needle (for making nets).

ফলন (*fr.* ফলিতে), *s.*, crop, produce. *24-Pargs.*

ফাঁড়, *s.*. breadth, width. *Raj.*

ফাঁপড় } (cp. †ফাঁপর difficulty), *s.*, agitation, confusion, bewilderment; e.g. আমার ফাঁপর
*ফাঁপর } লাগে I am confused, I have lost my presence of mind. *Raj.*

† ফাক, *s.* (1) an opening of any kind, fissure, crevice (= ‡ফাঁক) ; (2) the open air, e.g. ফাকে যাইতে to go into the open air, go outside, *24-Pargs.*; (3) opening, opportunity, *24-Pargs.*

ফাকি
†ফাকী } *s.*, deception, fraud, cheating, swindling. *Raj.*

† ফাটক, *s.*, a gate, large door ; gate of a prison. ফাটক হইতে to be imprisoned.

ফাড় = ফাহাড়. *Chit.*

† ফাড়া (*fr.* †ফাড়িতে), *adj.*, torn, rent ; split, cleft.

ফাড়িতে, *v.a.*, to tear, rend ; to split, cleave, cut asunder ; to cut off, lop off.

ফাণ, *s.*, probability, likelihood ; e.g. ফাণ লার (for লাগে) "the probability occurs, it is probable." *Chit.*

ফারক (Arab. فرق), *s.* (1) difference, distinction, separation, *Gen.* ; e.g. ফারকের লোক people from elsewhere, outside folk, *Tip.*; (2) relinquishment, release, *Raj.* (This meaning seems to come from Arab. فارغ).

ফারকত } (formed apparently from a confusion of Arab. فارغ خطّى with فرق), *s.* (1)
ফারকতি } divorce, deed of divorce, *Gen.* ; (2) ফারকতি a receipt in full for the year's rent, given by a landlord to a tenant, *Raj.*

ফারা, *s.*, hiring, engaging, employing. *Raj.*

ফার্ষা = ফরষা.

ফাল, *s.*, a jump, leap : ফাল দিতে to jump. *Chit.*

ফালাইতে (*cp.* †ফেলাইতে), *v.a.* to throw, cast. *Chit.*

ফাহাড় (= পাহাড়), *s.*, a hill, mountain. *Chit.*
ফালি, *s.*, a square-shaped chili basket. *Chit.*
ফিকুল, *s.*, a spear. *Sylh.*
ফিরিওয়ালা (*fr.* †ফিরিতে), *s.*, a hawker, pedlar.
ফুকব, *s.*, a hole through a wall as a drainage passage. *24-Pargs.*
ফুকে (crp. of পুষ্করিণী ? cp. পুখুর), *s.*, a tank. *Chit.*
ফুজ্জী (crp. of ফুত + জী), *s.*, sons and daughters, children. *Chit.*
ফুট, *s.*, a drop (of rain). *Jess.*
ফুটো, *s.*, penetration, perforation. *Mald.*
ফুত, *s.*, twine, string, thread. *Chit.*
ফুত (crp. of পুত্র), *s.*, a son. *Chit.*
ফুরফুরি, *s.*, the lungs. *Chit.*
*ফুল, *s.*, a kind of ear-ornament. *Hug.*
ফুস্কীন (Santāli ?), *s.*, a witch (= ফক্‌ষীন). *Mald.*
ফ, *s.*, blowing; ফূ দিতে to blow. *Jess.*
ফূ, ফূআ (পূপা), *s.*, paternal aunt. *Chit.*
ফূআতো = পূপতো. *Chit.*
ফূকা, *adj.*, uncultivated, fallow, waste. *Mald.*
ফূম্মিখ্যা see মিখ্যা. *Chit.*
ফূম্মুই (পূর্ব্বমুখী), *adj.*, facing eastwards. *Chit.* See মুই.
ফলা (= †ফুলা), *s.*, a swelling, tumour. *Jess.*
ফেঁচ, *s.*, a cut, cut-mark, incision; notch. *Raj.*
ফেণ, *s.*, the water in which rice has been boiled, rice-water, rice-gruel. *Mald.*
ফেণা = পণা. *Chit.*
ফেণী, *s.*, a small round disk, attached to one part of a nose-ring (নথ) and balanced on the other side by the চান্দ. *Raj.*
ফেরুআ, *s.*, a kind of lota. *Raj.*
ফেরুঘটী, *s.*, a small ghati for drinking water from. *Jess.*
ফেল (Engl. 'fail'); ফেল হইতে to fail, become bankrupt. *Bak.*
ফেল্‌শানী (Arabic ?), *s.* sexual intercourse. *Raj.*
ফৈসল (for ফসল), *s.*, crops, harvest. *Jess.*
ফো (crp. of পোলা), *s.* (1) boy, lad, *Chit.*; (2) a son, *24-Pargs.*, e.g. ভাশুর ফো husband's elder brother's son.
ফোআ (crp. of পোলা), *s.*, a child; *generally* boy, lad, young son; মাইয়া ফোআ a girl, young daughter. *Chit.*
ফোআই *s.*, an oar (= পাঙ্গোই ?). *Chit.*
ফোআল, *s.*, plural of ফোআ (formed thus, ফোআ সকল, ফোআ হকল, ফোআ হঅল, ফোআ হল, ফোআল), boys, sons. *Chit.*
ফোইর, ফোইরি (crp. of পুষ্করিণী through some forms like §পুখরি, পুখির, §পুইর; cp. পুখুর), *s.*, a tank, *Chit.*
ফোতন, *adv.*, lying on one's back, supine. *Chit.*
ফোস্কা, *s.*, a swelling or blister on the skin. *24-Pargs.*

ব

ব. This letter is often confused with গ, especially at the beginning of a word in Midnapore and Orissa.

বই, *adv.* = বহি.

বইতে (for *বহিতে), *v.a.*, to carry, bear. *Sylh.*

বইতে (for *বসিতে) , *v.n.*, to sit. *Chit.*

বইন = বহিন. *E. Beng.*

বউ (*fr.* বধূ), *s.* (1) daughter-in-law ; (2) a wife. বউ মানুষ a modest married woman, a home-keeping wife, *Sundarbans.*

বঁটি = বটী.

বকন (= †বকনা), *s.*, heifer.

বকলি, *s.*, courtyard. *24-Pargs.*

বকাট (*fr.* †বকিতে), *s.*, one who is always talking, a chatterbox. *Pub.*

বকাবকি (*fr.* †বকিতে), *s.*, bandying words, altercation, dispute, quarrel. *C. Beng.*

†বকিতে, *v.a.* and *n.* (1) to speak, talk, tell, *Mald.* ; (2) to prate, chatter.

বকেরা (*fr.* †বকিতে), *s.*, altercation, dispute, quarrel. *Mald.*

বক্রিয়া, *s.*, a large brass cooking-pot. *Raj.* Cp. বগ্গা.

বক্র, *s.*, a share, portion.

†বক্রা (Hindi বক্করা), *s.* (1) a he-goat ; (2) a piece of goat's flesh for sale.

†বগী, *s.*, a straight hanger (used in sacrificing goats). *24-Pargs.*

বগ্‌চর, *s.*, the inner sloping bank of a tank just above the water.

বগ্গা, *s.*, a large low wide-mouthed brass pot (used for boiling). *Mald* (= তস্‌লা).

বঙ্গর *s.*, cotton-tree. *Raj.*

†বচসা, *s.*, altercation, dispute, quarrel. *24-Pargs.*

বটি, *s.*, a knife fixed upright in a flat-board and used for slicing fish.

বটিয়া, *s.*, a paddle (made of one piece of wood) of a boat.

†বটী = বটি.

বড় (baṛ), *s.*, a rope of twisted straw. *Hug.*

*বড়, *adj.*, great. In *Chit.* pronounced *baṛ.*

*বড়, *adj.*, eldest of sons (or brothers).

বড় ধান a kind of late paddy, grown on low land and reaped about February (?)

বড় মহরি, *adv.*, often, frequently ; constantly. *Raj.*

বড়ন ধান = বড় ধান. *Raj.*

বড়ান ধান, *s.*, a kind of paddy grown on low land, which is liable to be flooded. *Jess.* = বড় ধান.

বড়্‌কি, *s.*, fishing-hook. *Chit.*

বড়্‌গিন (বড়), *adj.*, great, large. *Chit.*

বড্ড (*fr.* Skt. বৃহত্ ; = বড়), *adv.*, very, exceedingly.

*বণ্টক, *s.* division, partition, sharing out.

বত, *s.*, stream, flow of water, current in a river. (= স্রোত). *Jess.*

বত (*bata*), *s.*, gain, profit, advantage. *Bak.*

বত্তা, *s.*, vomiting. *Pub.*

বত্তি, *s.*, split bamboo, a piece of bamboo split lengthwise. *Raj.* Cp. বাতা.

বদর (connected with বদল ?), *s.*, shout, noise. *Chit.*

বদল (for বাদল cloud), *s.* (1) cloud, esp. thunder-cloud ; (2) thunder.

বদলিয়া (*fr.* Arab. بَدَل, exchange), *s.*, a person who gives his labour to another in return for that person's labour. *Chit.*

বদা (Arabic بَيْضة ?), *s.*, egg. *Chit.*

বদ্‌মাশ (بد معاش), *adj.* (1) of bad livelihood ; (2) of bad conduct (as a man, a horse, etc.). *s.* (1) a man of bad livelihood ; (2) a man of bad conduct or nature ; (3) a ruffian, blackguard. Haughton gives বদ্‌মআশ.

বদ্‌মাশী, *s.*, conduct of the kinds described under বদ্‌মাশ.

বদ্‌লাই (*fr.* Arab. بَدَل, exchange), *adj.*, given in exchange, e.g. বদ্‌লাই কাজ labour given in exchange for labour. *Tip.*

*বনপুতি (for বহিনপুত), *s.*, a sister's son. *24-Pargs.*

বনবিবি. The Forest Lady, a goddess of the Sundarban forests in the 24-Parganas, propitiated by both Hindus and Mohammedans in order to obtain immunity from tigers. Her shrine is often marked only with a flag.

বনিতে (fr. rt. বন্ to honour, love ?), *v.n.*, to live in concord, be in harmony. *Bog.*

বনিবনাও (*fr.* বনিতে ; reduplicated), *s.* (1) living in concord, being in harmony, union ; (2) affection, friendship, good feeling (applied esp. to family life). Haughton gives বনাত, বনায় and বন্তি : I have not met with these words.

বনিহার, *s.*, a day-labourer. *Mald.*

বনিহারি, *s.*, the occupation, business or condition of a day-labourer ; daily manual labour. *Mald.*

বনু (*fr.* বহিন), *s.*, sister's husband. Haughton gives বনুই.

বন্দ (Pers. بَنْد ?), *s.* (1) a plot or parcel of land, a field ; (2) a plot of ground, used as a measure of length and equal to about 7 yards, *Jess.*; (3) a collection or cluster of bāṛis ; (4) the periodic time when any crop comes in or work is done (e.g. the four times in the year when mulberry leaves are plucked and cocoons are reeled ; the time when reeds are cut). *Raj.*

বন্দওয়ারা (*fr.* বন্দ), *s.*, a list or schedule of parcels of land specified in a deed. *Jess.*

*বন্ধ, *s.* (1) binding, tying, fastening ; (2) a bond, tie, fastening ; (3) obstructing, hindering ; (4) fastening in, shutting in ; (5) fastening out, exclusion, e.g. সমাজে তার বন্ধ হয় "he is excluded from the samāj," *Dac.* ; (6) a thing bound, composed or constructed so as to form one piece, mass or block ; (7) a piece of bamboo mat work of a particular size, 9 cubits long and 6 cubits wide (used as a unit of measurement of such work) *Dac.* ; (8) a parcel of land, a field ; (9) a collection or expanse of fields (= মাঠ), *Sylh.*

বয়লা, *s.*, a hollow khāru. *Chit.*

† বরজ, *s.*, a bāraī, one who cultivates and sells pān. *Chit.*

বরশি, *s.*, a fish-hook. *Dac.* Haughton gives বরশা and বরিশী.

বরা (for বরাহ), *s.*, wild pig. *24-Pargs.*

বরাত (Arab. براة), *s.* (1) a commission, assignment : an order or request, written or

verbal, authorizing another person to do something on one's behalf, generally in the way of payment, *Gen.* (2) special business, particular affair, *Mald. Adv.*, for, on behalf of, *Hug.*

*বরাবর, *adv.*, all along, continually, constantly. *24-Pargs.*

বরার্দ্দ, *adv.*, apparently, seemingly. *Bog.*

বরিন্দ (*fr.* বরেন্দ্র), *s.* (1) the country near the boundary between the *Rajshahi* and *Maldah* Districts; (2) main land (as distinguished from chars). *Raj.*

বরিন্দ্র (*fr.* বরেন্দ্র), *s.*, high land not submerged during the rains. *Mald.*

বরওয়ারি, *s.*, public village worship of an idol. *24-Pargs.*

বর্গ, *s.*, concord, agreement. *Chit.*

বর্গা, *s.*, the metayer system of cultivation, under which the raiyat does all the cultivation and keeps half the produce, and the landlord receives the other half. বর্গা করিতে or রাখিতে to take (as lessee) land in bargā tenure, বর্গা দিতে or বর্গা পত্তন রাখিতে to give (as lessor) land in bargā tenure.

বর্গা, *s.*, the small beams or rafters that are laid across the main beams in a roof.

বর্গাইত, *s.*, the lessee under the bargā system.

বর্গাদার, *s.*, the lessee under the bargā system.

বর্ষা, *s.* (1) rain, a shower; (2) the rainy season, *Gen.* (3) a storm, cyclone, *Bak.*

বলা কহা = কহা বলা. *Jess.*

বলিয়া, *s.*, small earthen pot. *Mald.*

†বসৎ, *s.* (1) dwelling; (2) a cultivator's homestead; often বসৎ বাড়ি. *E. Beng.*

বসতিতে (*fr.* বসতি), *v.n.* to dwell, reside. *Chit.*

বসিতে, *v.n.*, to be settled, accrue, become due (applied to the incidence of rent, esp. after a rent-free period), e.g. খাজানা বসে নাই "no rent has yet been assessed" or "become payable." *Bak.*

বস্তানি (Pers. بستہ), *s.*, roll (of paper). *Dac.*

বহর নৌকা, *s.*, large boat.

বহি (*fr.* বহ্নিঃ), *adv.*, except, besides. Rarely used except with কি, নহে, নয়, and নাই, e.g. আমি গিয়াছি বহি কি "what else did I do but go"; দুর্ভাগ্য বহি নহে "it is nothing but misfortune;" তার এক বহি কন্যা নাই "he has no daughter but one." It is also written †বই and † বৈ.

† বহিতে, *v.a.*, to carry, bear; to carry away. শ্বাস বহিতেছে "he draws breath with difficulty," "he can hardly breathe." *24-Pargs.*

বহিন (ভগিনী), *s.*, sister.

বহিনজী, *s.*, sister's daughter. *Raj.*

বাইঁ (*fr.* বাম), *s.* and *adj.*, left (not right).

বাইগুন, *s.*, the brinjal or egg-plant.

বাইজী, *s.*, a dancing girl, a singing girl. *Dac.*

বাইত ? করিতে, *v.n.*, to vomit. *Bak.*

বাইতে, *v.a.* (1) to pull, row (a boat); (2) to drag or ply (a fishing-net); (3) to ply (a fishing-hook). *E. Beng.* (for বাহিতে ? q.v.; and so from rt. বহ্ carry ?); (4) to drive (a plough). *E. Beng.*

বাইদ, *adj.*, third-class (cultivated land.) *Bank.*

বাইদ্যা, *s.*, striking, beating (with a blunt weapon). *Chit.*

বাইন, *s.*, scattering, sowing (seed). *E. Beng.*

বাইন *s.*, a drum-player.

বাইয়াঁ (*fr.* বাইঁ), *adj.*, left-handed. *Mald.*

বাইয়ুন = বাইগুন. *Chit.*

বাইরাইতে = বারিয়াইতে. *E. Beng.*

†বাইল, *s.*, the leaf of a folding door, half a খেওয়ার. *Jess.*

বাইলে জোৎস্না (for বালিয়া জ্যোৎস্না q.v.), *s.*, star-light on a clear moonless night. *Jess.*

বাইশ, *s.*, an adze. *Jess.*

বাউঁ, *s.*, a bracelet. *Chit.* (*fr.* বাহু ?)

বাউঁক (for বাহুঁক q.v. *fr.* Skt বহ্ carry), *s.*, a bamboo yoke over the shoulders (for carrying things). *Chit.*

বাউঁড়, *s.*, a long and narrow swamp, marsh or pool. *Jess.*

বাউক (*fr.* বক্র), *adj.*, crooked. বাউক মল or *simply* বাউক a contorted kind of anclet.

বাউটি (*fr.* বাহু ?), *s.* (1) a broad solid silver bracelet with ribbed rims, *C. Beng.*; (2) a kind of bracelet = চুর, *Mald.* বাউটি চুরি a very broad bracelet, of greater circumference at one end than at the other, *Jess.*

বাউড় = বাউঁড়. *Jess.*

বাউরত, *s.*, one's father's family, paternal relatives. *Chit.*

‡বাউল, *s.*, an itinerant ascetic, a wandering bairāgī. *Jess.*

বাওয়ালী, *s.*, a Sundarban wood-cutter.

বাঁএরা (বাহু ?), *s.*, upper arm. *Chit.*

বাঁক (*fr.* বহ্ carry ?), *s.*, shoulder-yoke (for carrying things), *Gen.* (2) a yoke-load, two bojhas, of paddy, *Jess.*; (3) a bamboo pole, *Mid.*

বাঁক (*fr.* বক্র), *s.* (1) a curve or reach (in a river); (2) the length of a curve or reach. It is used as a measure of distance by stream, and varies from about $\frac{1}{4}$ mile to 2 miles according to the size of the river. *Gen.* (3) a place where fishermen fish in a river, *Pub.*

†বাঁধা (*fr.* বাঁধিতে), *adj.*, bound, fastened, *Gen.* বাঁধা স্ত্রীলোক a woman kept (wholly by one man) as a mistress, a permanent mistress, *Raj.*; বাঁধা রাস্তা a firmly constructed well-raised road, *Gen.* বাঁধা রাখিতে to keep (a woman) as a permanent mistress, *Raj.*

†বাঁধিতে, *v.a.* (1) to bind, fasten, tie; (2) to shut up, confine; ধান বাঁধিতে to store up paddy in a gola; (3) to construct, build; রাস্তা বাঁধিতে to construct a solid road; নৌকা বাঁধিতে (*Chit.*) to build a boat; (4) to restrain, check, stop.

†বাঁশই, *s.*, a bamboo harrow (= মই). *Jess.*

বাঁশগাড়ি, *s.*, fixing a bamboo in the ground to indicate the taking of possession.

বাঁশড়ুগা
বাঁশড়ুবা } *s.*, a bamboo clump or thicket. *Chit.*

বাক (= বাঁক) a yoke-load. *Jess.*

বাকাঁরি, *s.*, a pin made of split bamboo. *Hug.*

বাকুল, *s.* (1) the part of the court-yard (āṅginā) below the verandah of a house (*fr.* বাহির কূল ?) *24-Pargs.*; (2) being beside or alongside, proximity (?) *Saugor.*

বাক্স (*Engl.* box), *s.*, a box, chest. হাত বাক্স a small box to be carried in the hand.

বাখর, *s.*, a softish white substance composed of roots used in the manufacture of intoxicating liquors. *Dac.*

*বাখারি, *s.*, a split bamboo.

বাগ, *s.*, advantage, superiority, e.g. বাগে পাইতে to get (a person) at a disadvantage. *Mald.*

† বাগান (Pers. باغ), *s.* (1) a wooded garden, grove, *Gen.* (2) jungle, *Jess.*

বাগার, *s.*, a ditch, trench (=আঁড়া and পয়গার). *Jess.*

বাঙ্ক = বাঁক, a curve or reach in a river.

† বাঙ্গলা, *adj.* (1) relating to Bengal; (2) country-made, of inferior make or quality, e.g. বাঙ্গলা ঘর (in a narrow sense) a kaccha house having a thatched roof with only two slopes, (in a wider sense) a thatched house, kaccha house (whence "bungalow"); বাঙ্গলা কাগজ country-made paper; বাঙ্গলা কবুলিয়ত an informal kabuliyat.

বাচাই (? *fr.* বাঁচাইতে to save, protect), *s.*, a temporary cattle-shed. *Chit.*

বাচারি, *s.*, a shed in a bazar. *Dac.*

বাচিতে (*fr.* বাঁচিতে ?), *v.a.*, to clear out, pick out, weed out. *Chit.*

বাচ্চা, *s.* (boy's slang), penis. *Bog.*

বাছড়া, *adj.*, uncultivated, fallow (as land). *Jess.*

‡ বাছা (*fr.* বৎস), *s.* (used in addressing women familiarly and good-humouredly) "my good girl," "my good woman."

বাজী (Pers. بازي), *s.*, a spectacle, display, tamāsha. *Mald.*

বাজুগোঁ (*fr.* *বাজু, and ?), *s.*, an armlet for the upper arm.

† বাটুআ, *s.*, a cloth bag-purse. *Jess.*

† বাট্‌খারা (Urdu), *s.*, weights for a weighing balance.

বাড়া ভাণিতে to husk paddy. *Raj.*

বাড়াইতে, *v.n.*, to talk in a turgid or thick manner (?); কেবল বাড়াইতেছে he can scarcely speak. *Mald.*

বাড়ি = বারি (a blow). *Jess.*

† বাড়ি (*fr.* বাটী), *s.* (1) a piece of ground fenced in *Orissa*; (2) an enclosed dwelling or residence; (3) a dwelling, residence; (4) high ground, *Sundarbans.*

বাড়ি
বাড়ী } *s.*, a bamboo staff or lāṭhi. *24-Pargs.*

বাড়ি, *s.*, a kind of stick or staff. *24-Pargs.*

বাণ (ভাণ ?) মারিতে, to bewitch, enchant. *Chit.*

বাণক, *s.*, a silk-reeling apparatus, a silk filature. *Raj.*

বাণাট, *s.*, a silk filature.

বাণাট, *s.*, warm clothing.

বাণ্ট, *s.*, the handle of a pocket-knife. *Jess.*

বাণ্ডি (Eng. "bundle" ?), *s.*, a small bundle or packet (as a box of matches). *Raj.* Cp. বাণ্ডিল.

বাণ্ডিল (Eng. "bundle"), *s.*, a packet, a match-box. *Raj.*

*বাত, *s.*, rheumatism, gout.

বাতা, *s.*, a slender or split bamboo. *Raj.* Cp. বত্তি.

বাতা, *s.*, a stone pestle. *24-Pargs.*

বাতা, *s.*, the top of the wall of a house near the roof. *Dac.*

বাতালি, *s.*, a chisel. *24-Pargs.*

বাতালি, *s.*, a small boat. *Sundarbans.*

†বাতাস, *s.*, evil influence.

†বাতাসা, *s.*, a kind of sweetmeat, small sugar-cakes.

বাত্তি?, *adj.*, mature, ripe (as fruit). *Dac.*

বাথন বাড়ি (1) a temporary hut for residence and housing cattle during the time of cultivation (as on a char); (2) a temporary zamindari cutcherry there. *Raj.*

বাদ (? Arab. بعد after), *adv.*, without. *Chit.*

বাদ উত্তর, *s.*, bandying words, altercation, quarrel. *Jess.*

বাদন, *s.*, a sail (of a boat). *Jess.*

†বাদলা (*fr.* বাদল), *adj.*, rainy.

বাদা, *s.*, the open fields (= মাঠ). *24-Pargs.*

বাদা (? Arab. بادية desert, wilderness), *s.*, forest, jungle; *adj.*, containing forest, jungly. e.g. বাদা জমি dense forest land, *Bak.*; *Sundarbans.*

বাদাইয়া থুইতে to hang (a thing) up against the wall. *Jess.*

বাদে (*fr.* বাদ?), *adv.*, besides, except. *Chit*

বান (*fr.* বন্য?), *s.*, a flood, inundation, *Raj.*; *Mald.*

বানা, *s.*, a close-set fence or barrier planted in water to prevent fish from escaping. *Raj.*

বানিতে, *v.a.*, to sow (plant). *Dac.*

বানিয়া (*fr.* বানা?), *s.*, kind of fish-trap, *Jess.*; বানিয়া ঝাড়িতে to empty (the fish) out of such a trap, *Jess.*

বান্দা, *s.*, pledgment, hypothecation, mortgage. *Chit.*

বান্দি (Pers. بندہ), *s.*, slave, *Chit.*; *Sylh*; বান্দিচুরা a stealer of slave-girls. *Sylh.*

বান্ধাল (*fr.* বন্ধ্), *s.*, a fence placed in or across a river to catch fish. *Jess.*

বাম, *s.*, a fathom. *Gen.*

বাম, *s.*, গরুর বাম cattle pasture. *Chit.*

বামাল, *s.*, property, goods, chattels (= মাল). *24-Pargs.*

বারি, *s.*, (1) a stick (= লাঠি); (2) a blow with a blunt weapon. See বাড়ি.

বারিতে (*fr.* বাহির), *v.a.*, to take out, extract.

বারিয়া পোকা a very small black fly, about $\frac{1}{1\frac{1}{2}}$ inch in length, which bites as badly as a mosquito. *Bak.*

বারিয়াইতে (*fr.* বারি), *v.a.*, to beat, strike, hit. *Dac.*

বার্বরি চুল (*fr.* বর্বর?) *s.*, hair hanging down to the shoulders and curled at the ends. *Dac.*

বালা, *s.*, kind of bracelet, *Mald.*; a hollow ring-bangle, *Jess.*; a thick khāru or bracelet. *Chit.*

বালাম, *s.*, (with or without নৌকা) a large boat, bound and fastened with bamboo and cane. *Chit.*

বালি, *s.*, a kind of nose-ring. *Raj.* Cp. বালী.

বালি চর (*fr.* বালি sand ? or বাল young ?), *s.*, a newly accreted sandbank.

বালিয়া জ্যোৎস্না *s.*, starlight on a clear moonless night. *Jess.* Cp. বাইলে জোৎস্না.

বালী, *s.*, a nose-ring (fastened through the septum). *Chit.* Cp. বালি.

বালু, *s.*, sand.

বাল্‌শী (*fr.* বালিশ), *s.*, pillow. *Jess.*

বাশুলা, *s.*, a small axe. *Mald.* *Cp.* বাইশ.

বাস, *adj.*, bad. *Chit.*

বাসই, *s.*, a harrow (= মই). *Jess.*

বাসট, *s.*, selecting, choosing out. *Raj.*

বাসারিয়া (*fr.* বাসা), *s.*, one who lives in a temporary hut.

বাসি ঘোকা, *s.*, midday meal (among cultivators). *Mald.*

*বাসিন্দা (Pers. باشنده), *s.*. resident (as a raiyat) on the land which he cultivates, khud-kāsht. *Bak.*

বাসুআ (*fr.* বাস), *s.*, inhabitant, resident. *Chit.*

† বাস্ত (*fr.* বাস), *s.*, the land on which a raiyat's dwelling is, homestead land.

বাহি (*fr.* বাহু ?), *s.*, kind of bracelet (= চুর). *Mald.*

বাহিতে (*fr.* বহ্ ?), *v.a.*, to ply (a boat). Cp. বাইতে.

বাহুঁক (*fr.* rt. বহ্), *s.*, a yoke for carrying burdens on the shoulder. *Mald.*

† বাহ্য (*adj.*, external, exterior. বাহ্য (or বাহ্যে) যাইতে to go outside to ease one's self, to ease one's self.

বি (contraction of বিবি), *s.*, a term added to a Mohammedan woman's name if she is married, or even generally, e.g. নূরন বি Nūran (nisa) Bibi.

বিউন, *s.*, paddy seedlings. *24-Pargs.*

বিওঁ (= বাউ), *s.*, fathom. *Chit.*

বিওন্দি জাল (*fr.* বিওঁ ?), *s.*, a large fishing net. *Chit.*

*বিকার, *s.*, collapse after bad fever, delirium, coma. It is often applied vulgarly to any critical condition of the body.

বিগড়, *s.*, a span measured between the thumb and middle finger. *Mald.*

† বিঘা *s.* (1) a superficial measure of land. Its size has varied in different places and at different times. The standard bighā has been fixed by Government at a square of 40 yards, that is, nearly one-third of an acre. (2) a linear measure of land, being the side of a square bighā, that is, 40 yards. The bighā, whether superficial or linear, is divided into 20 kāṭhās.

বিচরা (*fr.* বি and চর্ ?), *s.*, a piece of vacant ground around a garden, used for grazing cattle or growing crops. *Dac.*

বিচি (বীজ), *s.*, seed. *Chit.*

বিচোইন, *s.*, a large hand-fan, a hand pankha. *Chit.*

বিছরা (= পালান). *Dac.* Cf. বিচরা.

† বিছড়াইতে, *v.a.*, to search about. *Pub.* Cf. বীছ্‌ড়া.

বিজন (*fr.* বীজ), *s.*, semen virile. *Tip.*

বিজরা, *adj.*, unmarked, unstamped, unbranded. *Chit.* Cp. বিঝারা.

বিজলা (*fr.* বীজ), *s.*, semen virile (boy's slang). *Bog.*

বিজা (*fr.* বীজ), *s.*, semen virile. *Tip.*

বিজুয়া, *s.*, wizard, sorcerer. *Din.*

বিজ্য (*fr.* বীজ or বীর্য্য), *s.*, semen virile. *Bog.*

বিজ্‌লি (for বিচালি), *s.*, paddy-stalks, straw. বিজ্‌লি শুদ্ধ ধান unthreshed paddy. 24-*Pargs.*

বিঝারা, *adj.*, illicit, unlicensed. *Chit.* Cp. বিজরা.

বিড়বিড়, *s.*, a tingling sensation; গা বিড়বিড় করে the body is tingling. *Bak.*

*বিত্ত, *s.* (1) property, wealth, *Gen.* (2) landed property, *Bak.*

বিত্তি (*fr.* বৃত্তি), *s.*, land granted out by a landlord free of rent, a rent-free tenure. অন্দর বিত্তি a rent-free tenure granted to a woman; ঈশ্বর বিত্তি a rent-free tenure granted to an idol. *Jess.*

বিত্তি, *s.*, bamboo fish-trap. *Raj.*

বিনে (*fr.* ভিন্নে), *adv.*, besides, except. *Chit.*

বিন্ন জঙ্গল, grass jungle. *Dac.* Cp. বিন্যা.

বিন্যা, *s.*, a kind of grass or reed. *Raj.* Cp. বিন্ন.

বিয়ম (*fr.* rt. বী ?), *adj.*, 'having produced a young one' (applied to a goat that has produced a kid in contradistinction to one that has never produced).

বিয়া (*fr.* বিবাহ), *s.*, wedding, marriage. *E. Beng.*

বিয়াজ, *s.*, delay. *Jess.*

বিয়াদ, *s.*, remission (of rent). *Bak.*

বিয়ার, *s.*, breeze, wind. *Mald.* Hindi.

*বিবাদী, *adj.* (1) contentious, quarrelsome, litigious; (2) pertaining to a dispute or to litigation, disputed, contested; (3) *s.* (*Dac.*) dispute, ill-will, enmity.

বিরিদান, *s.*, brass box or casket or pot for keeping betel. *Raj.*; *Jess.*

বিরিন্তি, *s.*, one who works in return (for work done for him by another). 24-*Pargs.*

বির্ত্তি = বিত্তি.

বিলক, (*fr.* বিলক্ষ having a different mark) *adj.*, separate. *Chit.* Cp. বেলক.

বিলান (*fr.* বিল), *adj.*, pertaining to a bil or marsh, situated in a marsh or swamp. *Raj.*

*বিবি. *s.*, wife (among Mohammedans). *Chit.*

বিশা, *s.*, remembrance, recollection. *Mald.*

বিশা, *s.*, kind of chain for the waist. *Mald.*

বিশ্বাস a surname given to Mohammedans who can read and write. *Pub.*

বিষ্টা (*fr.* বিষ্ ordure ?), *s.*, a privy. *Dac.*

বিহাই (*fr.* বিবাহিত ?), *s.*, a son-in-law's brother. *Raj.*

বী (*fr.* বিয়া), *s.*, wedding, marriage. *Chit.*

বীচ (*fr.* বীজ), *s.*, seed; বীচ খোলা a seed-bed, nursery (for paddy seedlings before transplanting), *Bak.* বীচ ভাঙ্গিতে to pull up paddy seedlings in order to transplant them, 24-*Pargs.*

বীছড়া, *s.*, search, seeking. *Dac.* Cp. বিছড়াইতে.

বীয় (*fr.* বিবাহ), *s.*, marriage, wedding. *Jess.* The first marriage when applied to a Mohammedan woman.

বীল, *s.*, a large swamp or marsh, *Gen.* বীলত loc. cas., *Raj.*

বীষ, *s.*, dry measure of quantity (for paddy).

বীষ (*fr.* বিষ poison ?), *s.*, a pricking pain. *Jess.*

বুইঁ (*fr.* ভূইঁ). *s.*, land. *Jess.*

বুইন (for বহিন), *s.*, sister. *Jess.*

*বুক (*fr.* বক্ষঃ ?), *s.* (1) the breast, the chest; (2) a woman's breast.

বুকা (*fr.* বুক), *s.*, the breast, the chest. *Raj.*

বুক্‌ছা, *s.*, things wrapped up in a cloth, a bundle, parcel. *Jess.*

বুজন (*fr.* †বুজিতে), *s.*, filling in, stopping up (as a hole). *Jess.*

†বুজিতে *v.n.* (1) to be filled up; (2) to close (as the eyes); (3) to be extinguished (as a lamp).

†বুঝ (*fr.* ৱুধ্), *s.* (1) intellect, understanding; (2) thought, idea, opinion; বুঝ করিতে (*Chit.*) to decide.

বুড়িয়া, *s.*, a small axe. *Mid.*

বুতাম (Eng. "button"), *s.*, a button.

বুন (*fr.* বহিন through বুইন), *s.*, sister.

†বুনিতে, *v.a.*, to sow.

বুনিয়া (*fr.* বন through বোন), *adj. termination*: "having such and such a jungle": it denotes a place where jungle of the specified kind grows or grew, e.g. হোগুলবুনিয়া Hogulbuniyā (i.e. a place where there is or was hogul jungle). *Sundarbans.*

বুন্দি, *s.*, a twist (of straw), a roll or wisp (of straw). *Mald.* (*fr.* বৃন্দ ?).

†বুলাইতে, *v.a.*, to rub, stroke; rub with the hand. হাত বুলাইতে to rub with the hands, shampoo. *Dac.*

বূম, *s.*, the two long bamboo poles that form the lengthwise frame and shafts of a bullock cart. *Chit.*

বে (*fr.* বিবাহ; cp. বিয়া), *s.*, marriage, wedding. *24-Pargs.*

বেঅন্য (বেহান), *adv.*, in the morning. *Chit.*

বেআগ = বেবাক. *Chit.*

বেআগ্‌গুন (= বেবাকগুলিন) (1) all things, everything; (2) all persons. *E. Beng., esp. Chit.*

বেআবুন (*fr.* বেআব্রু), *s.*, violence, outrage (to a woman). *24-Pargs.*

†বেআব্রু (Pers. بے آبرو), *adj.*, dishonourable, base, mean, *Gen. s.*, dishonour, disgrace, *Jess.*

বেইল (= বেলা), *s.*, daytime. *Bak.*

বেউন, *s.*, paddy seedlings. *24-Pargs.*

বেউমন (*fr.* বে and উমন), *adj.*, dull, foolish, stupid. *Bak.*

বেওত, *s.*, compartment or room in a hut. *Jess.*

বেওয়াজিয়া, *s.*, a class of people who sell fancy goods and fish. They live in small semi-cylindrical huts raised on poles. *Bak.*

*বেঁকা, *adj.*, bent, curved; crooked, awry. বেঁকা বসিতে (*Jess.*) to sit down, leaning on one's side.

বেকমল, *s.*, a kind of twisted anclet. *Jess.*

বেকী (*fr.* *বেঁকা curved), *s.*, a large curved knife for paring horses' hoofs. *Jess.*

বেকী বেড়া (*fr.* বেঁকা), *s.*, a fence put just inside the entrance to a bāṛi to cut off the view from outside inwards. *Jess.*

বেগ = বেআগ q.v. *Chit.*

বেগুন = বাইগুন.

বেচন (*fr.* বীজ ?), *s.*, seed. *Jess.* বেচন ধান paddy seed for sowing. *Jess.*

বেজাই (Pers. بے جا), *adj.* (1) out of place; (2) improper, unfit; unbecoming, indecent; e.g. বেজাই গালি indecent abuse. *Raj.*

বেজ্জত (Arab. بے عزّت ?), *s.*, something unbefitting or incongruous, that may prove mischievous or cause trouble. *24-Pargs.*

* বেটা, *s.* (1) son; (2) *used familiarly, contemptuously or angrily,* "fellow" "my good fellow," "dolt," "rascal."

বেটাখাগী, *s.*, a woman who eats her son.

বেটাতারা, *s.*, a child's armlet. *Mald.*

বেটুআ, *s.*, a small cloth bag-purse. *Raj.* Cp. বোটা.

বেড়, *s.*, (1) barring, obstructing; (2) fence, hedge, enclosure; (3) surrounding, encompassing. *Sylh.*

বেড়, *s.*, ditch, channel. *Chit.*

বেড় (beṛa), *s.*, small circular receptacle. *Bank.*

বেড়ইতে (বেরইতে ? *for* বারিতে *fr.* বাহির ?), *v.a.* to thresh (e.g. paddy). *Bard.*

†বেড়াইতে, *v.n.*, to walk about, walk to and fro, to stroll (without any definite object).

†বেড়ী, *s.*, small pair of pincers. *Jess.*

বেণা, *s.*, (1) kind of high coarse grass (said to be khas-khas), *Raj.*; (2) a torch of twisted straw, *E. Beng.*

বেণ্টিতে, *v.a.*, to crush, pound, bruise (as a drug). *Mald.*

বেতা (*fr.* বেদনা ?), *s.*, pain. *Jess.*

বেতি (*fr.* ব্যতীত), *adj.* gone by, passed, elapsed. *24-Pargs.*

বেন্তুন (*fr.* ব্যঞ্জন), *s.*, curry. *24-Pargs.*

বেন্যা = বেহানে. *Chit.*

† বেবাক (بے باقي), *adj.*, all, every (not used for things). *E. Beng.*

বেবাচার, *adj.*, spoiled, wayward (as a child). *Raj.*

† বেমিল (بے ميل and মিলিতে), *s.*, disagreement, discord, ill-feeling. *Chit.*

বেরি = বাহিরে. *Jess.*

বেরিতে (*fr.* বাহির), *v.n.*, to go out, issue forth.

বেরুআবেরু, *s.*, fighting together. *Jess.*

বেলক (*fr.* বিলক্ষ having a different mark), *adj.*, separate, distinct. *Chit.* Cp. বিলক.

বেলনবারি, *s.*, a whetstone made of wood. *24-Pargs.*

*বেলা, *s.*, daytime, the time between sunrise and sunset.

বেলিতে (said to be from বেল্‌কিতে, from বেলক), *v.a.* to pick out and put apart, to divide apart, separate. *Mald.*

বেলী থাল, *s.*, a round platter with a high rim. *Jess.* (? *fr.* বেলা shore).

বেল্‌কানিতে (caus. of বেল্‌কিতে ? see বেলিতে) = বেলিতে. *Mald.*

বেশ, *s.*, property, wealth. *Chit.*

বেশ (Pers. بيش ?), *adv.*, well, excellently; very; most certainly: e.g. বেশ পারি most certainly I can. *Jess.*

বেশব, *adj.*, confused, agitated. *Mald.*

বেশুআ (বাঁশ), *adj.*, made or consisting of bamboo, e.g. বেশুআ লাঠি a bamboo lāṭhi. *Jess.*

বেহাই (*fr.* বিবাহিত ?), *s.* (*orig. prob.* any person related to one by marriage; see বিহাই) (1) *commonly* the father of one's son-in-law or daughter-in-law, *Gen.* (2) *less commonly* the father-in-law of one's nephew or niece; and (3) a sister-in-law's husband, *Mald.*

বেহান, *s.*, dawn, the morning. বেহানে about dawn, very early.

বৈ = বহি.

বৈটা (*fr.* বটিয়া), *s.*, a paddle (for a boat). *Dac.*

বৈটা, *s.*, a large and deep closely-constructed basket (holding 8 āṛhis of paddy). *Chit.*

বৈট্যা = বৈটা, বটিয়া.

বৈয়ম, *s.*, a large jar with a narrow neck, enclosed in wicker-work (ছানি) with a wicker-work handle: a tall jar. *Chit.*

বৈল্যাম, *s.*, a tall kind of āus (q.v.) rice, reaped at 2 or 3 seasons. *Chit.*

বৈশা (*fr.* বৈশাখ), *s.*, the month Baiśākh. *Chit.*

বৈষ্টম crp. of বৈষ্ণব.

বোই (*fr.* ভূই), *s.*, land. *Jess.*

†বোক্ছা, *s.*, a bundle wrapped up in cloth. *Jess.* Cp. বোচ্কা.

বোগ্না, *s.*, a large pot for cooking rice. *Raj.*

বোঙ্গা (Santāli ?), *s.*, a god or demon of the forest. *Mald.*

বোচা, *adj.*, flat, flattened (applied to the nose). *Dac.*

বোচ্কা, বোজ্কা } *s.*, bundle, packet. *N. and C. Beng.* Cp. বোক্ছা.

বোটা, *s.*, money-bag. *Dac.* Cp. বেটুআ.

বোটিয়া = বটিয়া, a paddle.

বোড়, *s.*, a waist-chain of beads. *How.*

বোড় (boṛa), *s.*, a pāṇ garden. *Chit.*

বোড়া, *adj.* (land) growing boṛo paddy. *Raj.*

বোণ, *s.*, a kind of thatching grass (which grows on chars). *Raj.*

বোন (modified pronunciation of বন, as জোন from জন), *s.* (1) any kind of jungle from high grass to trees; (2) śaṇ-grass, thatching grass. বোন আমে যাইতে to go to the forest to get wood, *Bak.*

†বোনাই, (*fr.* বুন), *s.*, sister's husband. *24-Pargs.*

বোমূতা, *s.*, the threads of a weaving instrument (রাজ). *Chit.*

†বোরা, *s.*, a small bag of gunny. *Mald.*

বোলচাল, *s.*, bandying of abuse. *Chit.*

বোলাক, *s.* (1) a nose-pendant, *Raj.*; (2) a nose-ring with pendants, *Chit.* ডাইল বোলাক a kind of bolāk, ḍāl bolāk, *Chit.*

বৌনা (*fr.* বুন), *s.*, sister's husband. *Jess.*

ব্যাক (*fr.* বেবাক through বেআক), *adj.*, all, every. *E. Beng.* ব্যাকে, *noun. pl.*, all persons, every one. *E. Beng.*

ব্যাগ for ব্যাক before a soft consonant; ব্যাগ্গুন=বেআগগুলিন q.v. *E. Beng.*; ব্যাগ মানুষ all men. *Chit.*

ব্যাম } (*fr.* ব্যামোহ), *s.*, illness, sickness. *Chit.*
ব্যামু }
ব্যাসর, *s.*, bolāk, q.v. *Raj.*
ব্রিহন্দ, *s.*, the courtyard space in front of one of the huts of a bāṛi. *Jess.*

ভ

ভ. This letter often approximates to the sound of *v* in modern pronunciation.
ভদ্রকূলি (ভদ্র and কূল), *adj.*, made on the banks of the R. Bhadra (a kind of very broad boat for carrying timber). *Khul.*
*ভদ্রাসন, *s.*, the family dwelling-house, the family house.
†ভরিতে, *v.a.* (1) to fill, fill up; (2) to load (a gun); *Gen.* (3) to rely upon, depend upon, trust to, *Raj.*
ভর্তরি (*from root* ভৃ), *s.*, compensation for damage inflicted. *Dac.*
ভর্ত্তা, *s.*, kind of curry made from cocoanut. *Bak.*
‡ভাইজ = ভাউজ. *24-Pargs.*
ভাই বউ (*fr.* ভাই and বউ), *s.* (1) a brother's wife, *Gen.* (2) a younger brother's wife, *Raj.*
ভাইস্তা, *s.*, brother's son. *Dac.*
ভাউ (†ভাও), *s.* (1) price, cost, value, *Dac.*; (2) commission charged by money-changers for changing money, *Dac.*
ভাউজ, *s.*, an elder brother's wife.
ভাউলিয়া নৌকা, *s.*, a bowlio, a large flat bottomed barge with cabins and venetian windows.
ভাওঁড়া, *s.*, comparing a survey map with the locality.
ভাওঁড়াইতে, *v.a.*, to make a bhāoṁṛā.
ভাঁজা, *s.*, a combination by which men work in turn for one another. *Mald.* (= গাঁতা *C. Beng.*) ভাঁজা করিতে to do such work. Cp. ভাঙ্গা.
ভাস, *s.*, rolling up (as of paper), folding up into small rolls. *Jess.* Haughton gives ভাঁজ.
ভাক্ত, *s.* (1) a devotee; (2) a male dancer, *Raj.*
ভাগ, *s.*, the metayer system of cultivation (=বর্গা). ভাগে দিতে to lease out under this system.
ভাগরা, *s.*, a raiyat who holds under the bhāg or metayer system. *Bak.*
ভাগাইতে, *v.a.* (1) to cause to flee or run away; (2) to induce to go away, entice away. *Dac.*
*ভাগাড়, *s.*, narrow tract of grass land used as village road. *Jess.*
ভাগিদার, *s.*, the raiyat under the bhāg or metayer system. *Pub.*
ভাগী, *s.*, the raiyat under the metayer system. *Hug.*
ভাগেড়া, *s.*, bhāg land, land let out under the metayer system. *Jess.*
ভাঙ্গাড় = ভাগাড়. *Jess.*
ভাচা দিতে to give (paddy) to be husked. *Hug.*
ভাজ, *s.*, sensation, perception (as of a person near). *Dac.*
ভাঙ্গা = ভাঁজা. *Mald.*

ভাট, *s.*, handle (of a knife). *Chit.*

*ভাটা, *s.* (1) the natural current of a river downwards; (2) the ebb-tide. ভাটা দিতে to take the ebb-tide.

ভাটি (*fr.* ভাটা), *adv.* (1) down-stream; (2) with the ebb-tide. Also metaphorically as (3) with the wind, down the wind, *Mald*; (4) ভাটি বেলা (*Raj.*; *Jess.*) afternoon.

ভাটি, *s.*, a still for distilling spirits. ভাটিখানা a distillery.

ভাড় (=*ভাঁড়) a small earthen pitcher. *Jess.*

*ভাড়া, *s.* (1) hire, rent (not applied to land). ভাড়া ভাঙ্গিতে., (*Jess.*) *lit.* to husk (paddy) for hire.

ভাড়াটি (*fr.* ভাড়া), *s.* (1) a tenant paying rent (for a house or room), a lodger. Haughton gives ভাড়াট্যা and ভাড়াটিয়া.

†ভাণিতে, *v.a.*, to husk (paddy).

*ভাণ্ডার, *s.*, store-house, magazine; (2) treasury; *Gen.* (3) kitchen, *Mald.*

ভাণ্ডারি (*fr.* ভাণ্ডার), *s.* (1) the keeper of a store-house or magazine; (2) a steward; (3) a caterer; (4) (*Mald.*) a cook.

ভাত কাপড় food and clothing, maintenance.

ভায়রা ভাই, *s.*, wife's sister's husband. *C. Beng.*

† ভারা, *s.*, a framework for fastening cattle to. *24-Pargs.*

ভারাণি, *s.*, a khāl or creek or strait into which the tide flows from both ends. *Bak.*

*ভারী, *adj.* (1) carrying a burden, loaded, laden; (2) possessing weight, heavy; (3) weighty, important, momentous; (4) serious, sad, wretched, e.g. ভারী অবস্থা (*Mald.*) a wretched plight; (5) used 'colloq.' as *adv.* to express the superlative degree, generally with uncomplimentary meaning, e.g. ভারী বদ্‌মাশ an "awful" black-guard.

ভাল, *s.*, the prong of a ভেঙ্গরি q.v. *Sylh.*

*ভাল. ভাল চাইতে to intend well, to have a real intention, *Jess.*

† ভাসিতে, *v.n.* (1) to float in water; (2) to be submerged, be overflowed, e.g. চর ভাসিয়া যায় the char becomes submerged.

ভাস্তিয়, *adj.*, floating. *Pub.*

ভাস্তিয়া, *s.*, brother's son. *Jess.*

† ভিক (*fr.* ভিক্ষা), *s.*, alms, charity.

ভিকারি (ভিক), *s.*, Hindu religious mendicant. *Chit.*

*ভিক্ষা, *s.* (1) alms, charity; (2) the alms given to a brāhman boy, newly invested with the sacred thread, by some woman; she becomes his ভিক্ষার মা and he becomes her ভিক্ষার চেলা, *Hug*; (3) a present given by raiyats to the zamindar on special occasions (as an adoption), *Raj.*

ভিজিতে, *v.n.*, to be wet or damp. Haughton gives ভিজাইতে. Cp. ভেজিতে.

*ভিটা, *s.*, the raised earthen base of a house.

ভিটি, *s.* (1) a house-site; (2) garden and outskirts or appurtenances of a bari; see ছাটি. *Tip.*

ভিণ্টা = ভিটা. *Chit.*

† ভিন (*fr.* ভিন্ন), *adj.*, separate, distinct, different.

ভুঁতা, *s.*, rind, peel (of fruit). *Raj.*

ভুণ্ডল = ভুলুক. *Jess.*
ভুতি., *s.*, rind, peel (of fruit). *Raj.* Cp. ভুঁতা.
ভুবল, *s.*, a peep, a glance. *Jess.*
ভুলুক. *s.* (1) peeping into; (2) prying, searching about. *Jess.*
ভুল্‌কি, *s.* = ভুলুক.
*ভুঁই (*fr.* ভূমি), *s.* (1) land; (2) ground, soil; (3) a field. ভুঁই করিতে to till land, *Khul.* ভুঁই রূইতে to transplant paddy seedlings.
ভূর, *s.* (1) full dawn, morning twilight.
ভূরা, *s.*, millet. *Jess.*
ভূরু (ঋ), *s.*, eye-brow. *Chit.*
ভৃঙ্গর, *s.*, a kind of (brass) jug with a spout. *Saugor.*
ভেক, *s.*, initiation into Baiṣṇabism. *Far.*
ভেঙ্গরি, *s.*, three-pronged spear (for spearing tortoises). *Sylh.*
ভেজাল, *s.* (1) anything that brings one into trouble, suspicious article in one's possession, *Jess.*; (2) adulteration; and thence (3) *slang*, a great crowd. *Hug.*
ভেজিতে, *v.n.*, to be wet or damp. রক্ত ভেজিয়া পড়িল blood fell profusely, *Jess.* Haughton gives ভিজাইতে. Cp. ভিজিতে.
ভেজিয়া, *s.*, damp, moisture. *Jess.*
ভেটিয়াল (*fr.* ভাটি বেলা), *s.*, afternoon. *Jess.*
† ভেড়ী, *s.*, an embankment.
ভেনা, *s.*, a scarecrow, anything put up to frighten wild animals away. *Bak.*
ভৈরা (= ভায়রা ভাই), *s.*, wife's sister's husband. *Jess.*
ভোট, *adv.*, under, below. *Chit.*
ভোনাই (*fr.* বহিন ?), *s.*, sister's husband. 24-*Pargs.*
ভোল, *s.*, a conduit, pipe. তালের ভোল a tāl tree hollowed to form a water-pipe. 24-*Pargs.*
*ভ্রম, *s.*, respect, honour (due to a person). *Sylh.*

ম

মঁইয়, *s.*, a harrow. *Chit.*
মঁইয়া, *s.*, a peg for tethering cattle when grazing. *Chit.*
মইনা, *s.*, inquest (by the Police); examination. 24-*Pargs.*
মক্কা, *s.*, clenched hand, fist, *Mald.*
মক্রি (Hind.), *adj.*, dim, faint, e.g. মক্রি চান্দনি faint moon-light (as when the moon is clouded over). *Mald.*
মক্‌ষম, *adv.*, in the direction of (=মুখি *Chit.*). *Dac.*
মগা, *s.*, kind of weapon. *Sylh.*
মাগ্রব (Arab. مغرب), *s.*, time for lighting lamps, about half an hour after sunset. *Chit.*
মগ্‌লা (see মগা), *s.*, a weapon with an iron point. *Sylh.*
*মজা (Pers. مزه), *s.* (1) flavour, savour, taste, *Gen.* (2) fun, joke, *Raj.*; (3) a practical joke, *Raj.* মজা দেখাইতে (a threat) to serve a person out, to punish, *Jess.*
*মটর, *s.* (1) a pea; (2) a bead.

*মট্‌কা, *s.* (1) the ridge of a thatched roof, *Jess.*; (2) a large jar, *Raj.*; (3) a gola, *Raj.*

*মণ্ডল, *s.* (1) the chief tenant of a village, the head man, *Gen.* (2) a head man among retainers, *Dac.*; (3) a peon who brings the raiyats to the zamindari office to pay their rents, *Raj.*

*মণ্ডলী, *s.*, the business or status of a mandal. *Raj.*

† মণ্ডা, *s.*, a kind of sweetmeat made of flour and sugar. *Mald.*

† মতন, *s.*, mode, manner: *adj.*, in the manner, like, resembling, e.g. সে মতন like that.

মতর, *adj.* =মতন. *Jess.*

মথ্‌না, *s.*, the spot where water is baled out from a pond, etc. *Hug.*

মনোন্তর (*fr.* মনঃ and অন্তর), *s.*, disagreement, enmity.

মনোহরী, *s.*, fancy goods, pretty articles.

মন্দ পড়িতে *v.n.*, to be slack, to have no current (as the tide). *Nautical.*

মরলি, *s.*, the space between the top of the wall and the roof (in a house). *24-Pargs.*

মরা, *s.*, shoulder. *Dac.*

*মরাই, *s.*, a round granary, with sides made of twisted-straw rope wound round and round. *Hug.*

† মরিতে, *v.n.* (1) to die, perish; (2) to dry up, wither; (3) to decay; (4) to come to an end, cease. মরি যাইতে to silt up, become filled up (as a river). মরা পড়িতে (*Chit.*) to be drowned.

মর্ত্তি (*fr.* মরিতে), *s.*, death. *Hug.*

† মল, *s.*, a (woman's) circular anclet.

মল, *gen.* doubled, মল মল; a word used to elephants meaning 'step out,' 'walk on,' 'go on'.

† মলঙ্গী, *s.*, a man employed in salt-manufacture from sea-water.

মলম মারিতে, *v.a.*, to thresh (paddy). *Jess.* (? *for* মলন *fr.* মলিতে).

মলাইতে, *v.a.*, to thresh (paddy). *Jess.*

† মলিতে, *v.a.*, to thresh (paddy).

মসী (= † মাসী), *s.*, mother's sister. *Chit.*

মসলা (= † মসালা), *s.*, spices. *Hug.*

*মহাল (Arab. محل), *s.*, a landed estate, held directly under the State, recorded in the Collector's register and paying revenue to the Collector. খাস মহাল a landed estate belonging to the State and managed directly by it.

মহালত (Arab. pl. محلّات), *s.*, the district or ward ministered to by a khondakār. *Chit.*

মহিন্দা, *s.*, a servant who looks after the cultivation of land. *24-Pargs.* *Cp.* মাইন্দা (*fr.* মাহিনা ?)

মাইট (*fr.* মা ?), *s.*, a large earthen jar. *Bak.*

মাইন্দা, *s.*, a male domestic servant. *Jess.* Cp. মহিন্দা.

† মাইয়া (*fr.* *মাই a woman's breast ? or *for* মাগিয়া from মাগ ?), *s.* (1) a female, a woman or girl; (2) womenkind; (3) a wife. The word মানুষ is often added to it, especially in the last two senses. Haughton gives মেয়ে and মেয়্যা.

মাইয়ালা (মাইয়া + ওয়ালা ?), *s.*, a woman. *Chit.*

মাইর (§মারি), *s.*, beating, striking, thrashing, *E. Beng.* মাইর খাইতে to be beaten: *in Sylh.* a fight.

মাউই (*fr.* মা ?), *adj.*, like a mother (cp. তাউই), *Jess.*; *s.*, a brother's or sister's or cousin's mother-in-law. *Jess.*

মাঁদুর (=*মাদুর), *s.*, a kind of grass mat. *Jess.*

মাকড়ি, *s.*, a large circular ear-ring. *Hug, 24-Pargs.*

‡মাগ, *s.* (1) a woman, a wench; (2) a wife.

মাগিতে, *v.a.*, to beg, to live by begging. *Chit.* Cp. মাঙ্গিতে.

মাগিন (*fr.* মাগ), *s.* = মাগ. *Mald.*

*মাগী (*fr.* মাগ), *s.*, (1) a woman, *esp.* a young woman, a wench, *gen.*; (2) a wife; (3) a leman, concubine, mistress, *Gen.*

মাঙ্গনি (*fr.* †মাঙ্গিতে), *adj.*, borrowed, lent. *Mald.*

মাঙ্গিতে, *v.a.*, to beg, solicit.

*মাচা, *s.*, a high platform, a stage on a scaffold.

মাচাইল (*fr.* * মাচা, Skr. মঞ্চ), a bamboo platform in a boat. *Dac.*

মাচান =*মাচা.

মাচি পাত, *s.*, a flat triangular ear- pendant. *Raj.*

মাচিয়া (*fr.* মাচা ?), *s.*, a chair. *Raj.*

মাচিয়া পাত = মাচি পাত. *Raj.*

মাচী = *মাচা. *Jess.*

মাচ্ছুয়া গাড়ি, *s.*, a pond in a bīl or marsh where fish are caught. *Jess.*

‡মাজরা (Arab. ماجرا), *s.*, occurrence, event, incident, *Gen.*; used of a criminal offence. মাজরা স্থান, *s.*, the place of the occurrence, the spot where an offence was committed, the scene of the offence.

মাজরা, *s.*, blight in paddy(?); মাজরা পোকা the blight insect. *Bak.*

*মাজা (*fr.* মধ্য), *s.*, the small of the back. *Raj.*

মাজাইতে (*fr.* †মাজিতে), *v.a.*, to wipe, cleanse. *Saugor.*

মাজি = মাঝি.

†মাজিতে (*fr.* rt. মৃজ্), *v.a.*, to wipe, rub, clean.

মাজিয়া (*fr.* মধ্য or *fr.* rt. মৃজ্), *s.*, the floor (of a house), *Jess.* Haughton gives মেজিয়া, মেজ্যা and মেজে. Cp. মেজ.

মাজিয়া (*fr.* মধ্য), *adj.*, middle, middlemost. মাজিয়া ভাই the middle brother (in a family).

†মাজী = মাঝি.

*মাঝ (*fr.* মধ্য), *s.*, the middle, centre. মাঝখান, *s.*, the middle, centre.

†মাঝার = মাঝ.

†মাঝারী (*fr.* মাঝ), *adj.*, middling, moderate.

‡মাঝি (*fr.* মাঝ and মধ্য; *original meaning being* 'the centre man' who collects a gang or crew around him ?), *s.* (1) a headman, foreman (of a gang of coolies), *Chit.*; (2) a steersman, helmsman (he being the headman in a boat), *Gen.*; (3) a pilot.

মাট, *s.*, a preparation of mahwa fruit and water, from which spirituous liquor is distilled.

*মাটি (*fr.* মৃত্তিকা), *s.* (1) earth, soil; (2) land, *esp.* cultivated land. (It is generally used

in *Raj.* instead of জমি) ; (3) mud, dirt ; *used metaphor.*, e.g. মাটি খাইতে to do a disgraceful or wicked act, *Dac.*

মাটিয়াল (*fr.* মাটি), *s.* (1) a man who digs earth, *Chit.* ; (2) a low caste of labourers who do earth-work, *Raj.* ; (3) an excavation in the earth, a ditch, trench, pond, *N. Beng.*

মাটিয়াল, *s.*, a small silver bangle. *Mald.* Cp. মেটিয়া.

মাটিয়ালা (*fr.* মাটি), *s.*, high land, permanent land, land that has not been subjected to diluvion (= করারা). *Mald.*

মাটীল (*fr.* মাটি), *adj.*, made of earth, earthen. *Chit.*

মাড়াই (*fr.* † মাড়াইতে), *s.*, threshing (paddy). *Jess.*

মাত (*fr.* মাতিতে), *s.*, speaking, talking. *Chit.* মাত বোল talking, conversation. *Chit.*

মাতন (*fr.* মাতিতে), *s.* (1) speaking, talking ; (2) a word ; (3) a question. *Chit.*

মাতবর } *s.*, headman of a village, *E. Beng.* ; *adj.*, worthy of respect, eminent, principal.
মাতব্বর } This word is said to be a Mohammedan word and is generally connected with Arab. مُعتبر "trustworthy, respectable." As a title it seems more probably a a corruption of *mātar-bar*, i.e. Skr. *mahattara-vara*, "chief of the greater men (of the village)." This derivation may have caused the modification of the first syllable of the Arabic word, and so the two words and their meanings may have become fused.

† মাত্‌লামি (*fr.* মাতাল), *s.*, drunkenness, intoxication.

মাতিতে, *v.n.*, to speak, talk ; (2) to utter sound. *Chit.*

*মাথা (*fr.* মস্তক), *s.* (1) the head ; মাথা লাল করিতে to break a (man's) head ; (2) the top, summit.

মাথায় (*loc.* case of মাথা), *adv.* (1) on the top of, upon ; (2) upon, immediately following on, e.g. ডাকের মাথায় upon the call, immediately after the call, *E. Beng.* ; (2) upon, in relation to, e.g. পাঁচ বিঘার মাথায় তিন কাঠা কিছুই নয় (a discrepancy of) 3 kāṭhās in (a total length of) 5 bighās is of no importance.

মাথাইল (*fr.* মাথা), *s.* = জুঙ্গড়া. *Dac.*

মাথাঘুষা, *s.*, menstruation. *Mald.*

মাদান (*fr.* মাধ্যন ?), *s.*, afternoon. *Tip.*

মাধ্যন (*fr.* *মধ্যাহ্ন), *s.*, midday, noon. *Dac.*

† মানিতে (*fr. rt.* মান্), *v.a.* (1) to honour, venerate, revere, worship ; (2) to esteem, respect, regard ; (3) to regard, attend to, mind ; (4) to pay attention to, obey, heed ; (5) to obey, answer (as a boat. *Nautical*).

মানু (*fr.* মানুষ), *s.*, men, people. *Tip.*

মানুষ, *s.* (1) a human being ; মাইয়া মানুষ a female, woman or girl ; ছোট মানুষ a youngster, boy, lad ; (2) folk, people.

মায়া, *s.* liking (= ভাল বাসন). *Jess.*

†মারিতে, *v.a.* (1) to put to death, kill ; but sometimes intransitively (idiomatically) as মারা যাইতে to die (*24-Pargs.*) ; মারি যাইতে to die (*Chit.*) ; (2) to destroy, efface, obliterate ; পথ মারা গিয়াছে the path has been obliterated ; (3) to beat, strike, thrash ; মারিয়া খুন করিতে to give a good thrashing (*Jess*).

মার্‌ধর (*fr.* মারিতে + ধরিতে), *s.*, beating, assaulting, thrashing.

মার্‌পিট } (*fr.* মারিতে + পিটিতে), *s.*, beating, assaulting, thrashing.
মার্‌পীট }

মালকোচা, *s.*, the pleats of the dhoti that hang down in front between the legs.

মালত, *s.*, party, faction (= দল). *Pub.*

মালত = মহালত. *Chit.*

মালা, *s.*, a kind of necklace, *Raj.* ; *Dac.*

* মালা, *s.* (1) the shell of a cocoanut ; (2) a cup made out of a cocoanut shell, *Raj.*

* মালো, *s.*, a fisherman, caste of fishermen.

মাল্লা, *s.*, abbrev. of মাহাল্লা.

মাসিয়া, *adj.*, having any colour, not primary but secondary and intermediate, as brown, grey, slate-coloured, etc. *Chit.*

মাহাল্লা (Arab. محل), *s.*, a storey (of a house).

মাহিপোষ, *s.*, a large wooden chest or platform-box, in which things are kept and on which people sleep. *Raj.*

মিখ্যা, *adv. of termination* (*fr.* মুখ), facing, towards, e.g. ফুম্‌ মিখ্যা (for পূব মুখী) facing eastwards : উন্মিখ্যা northwards : এমিখ্যা in this direction, hitherward. *Chit.*

মিছিলের চৌকী, *s.*, a kind of taziya carried about in the Janmāṣṭamī festival-procession. *Dac.*

মিজ্জী = মিয়া জী. *Chit.*

মিঠাইতে, *v.a.*, to settle amicably, compromise ; hush up. *Jess.*

মিয়া corrup. of মিখ্যা. *Chit.*

মিয়া জী (*fr.* মিয়াঁ + জী), *s.*, a name for a teacher of Persian. *Chit.*

† মির্গি (*fr.* মৃগী), *s.*, epilepsy.

মিরিগি = মির্গি.

মিল (*fr.* মিলিতে), *s.* (1) union, society ; (2) intercourse, association, *Raj.* ; (3) agreement, concord ; (4) acquaintance, friendship, intimacy, *Raj.*

মিল্‌কিয়ত (Arab. ملكيت), *s.*, rent-free land. *Raj.*

মিস্তরি, *s.* (1) a barber ; (2) a carpenter, *Chit.*

মুই (মুখী), *adv.*, facing towards. *Chit.* Compounded with উত্তর, পূব, দক্ষিণ and পশ্চিম ; as উন্‌মুই, northwards ; ফুম্‌মুই eastwards. *Chit.*

মুকবেলা (Arab. مقابلة), *s.*, altercation, dispute.

মুক্কা, *s.*, a thump with the fist (=কীল). *Mald.*

মুখদণ্ড, *s.*, quarrelling. *Jess.*

*মুগুর (*fr.* মুদ্গর) *s.* (1) a wooden mattock, *Dac.* ; (2) a bamboo staff or mace.

† মুচি, *s.*, a crucible. *Jess.*

মুজা, *s.*, a kind of tree (used for fences). *Dac.*

মুজাফাত = মদাফাত. *Jess.*

মুটীনী (*fr.* * মুটী the fist), *s.*, holding in the hand, handling. *Sylh.*

মুটুম হাত, *s.*, a short cubit, measured with the hand closed.

† মুড় (mura), *s.*, end, extremity, point (as of a stick).

† মুড়া (*fr.* মুড়), *s.* (1) side, direction, *Gen.* ; (2) a downward blow with the heel, *Dac.* ; (3) a hill, *Chit.*

মুড়াল (*fr.* মণ্ডল), *s.*, headman of a village. *24-Pargs.*

মুণ্ড, *s.*, counterfoil of a dākhila (rent-receipt). *Chit.*

মুদাফাত (Arab. مُدافعت?), *s.*, land taken by a landlord from one raiyat and leased out to another raiyat. If taken from *A* and leased to *B*, it is *B's* jamā land and *A's* mudāfāt. *Jess.*

মুদাম
মুদামি } (Arab. مُدام), *adv.*, constantly, frequently, often, repeatedly. *Raj.*

মুদ্‌গর, *s.*, the pestle in a dheṁki. *Pub.*

মুদ্দ (*fr.* মুর্দা), *s.*, corpse.

মুনি, (*prob. fr.* মুনিষ্য; cp. মানু), *s.*, a labourer. *Tip.*

মুনিষ, *s.*, labour, manual work (= মুনিষ্য). *Raj.*

মুনিষ্য (*for* মনুষ্য), *s.*, a human being.

মুনিষ্য (*fr.* মানুষ্য), *s.*, labour, manual work. *Raj.*

† মুনীব (Arab. مُنيب), *s.* (1) a patron, master; (2) a landlord, zamindar.

মুরা, *s.*, a hill, *Chit.* Cp. মুড়া: jungle, *Chit.*

মুর্কি, *s.*, an ear-ring. *Dac.*

মুরকি, *s.*, the common fowl (*মুরগি) in its wild state, jungle fowl. *Chit.*

মুলম (*fr.* মূল?), *s.*, the principal stream of a river or khāl.

মুলুক (Arab. مُلک), *s.* (1) a country, kingdom, realm; (2) the country (as distinguished from 'town'). মুলুক জালাইতে (*lit.*, to set the country on fire) to make a place hot, so as to arouse the authorities, *Chit.*

মুসলম (Arab. مُسلّم), *adj.*, all, entire, whole; every. *Jess.*

মুস্থলিম = মুসলম. *Dac.*

মুহানা (*fr.* মুঁহ), *s.*, a drain or outlet of a tank.

মূত (মূত্র), *s.*, urine. *Bankur.*

মূলি (*fr.* মূল?), *s.*, a pointed bamboo (used as a weapon). *Tip.*

† মেঘলা (*fr.* মেঘ), *adj.*, cloudy. *Chit.*

মেছলা, *s.*, a gamla, a large earthenware basin. *Hug.* (= নান্দ).

মেজ (? connected with মাজিয়া, *fr.* মধ্য), *s.*, the floor (of a house). *Raj.*; *24-Pargs.*; *Chit.*; *Jess.* Cp. মেজে, মেজিয়া and মেজ্যা and মেঁজা.

মেজ, *s.*, a chair. *Mald.*

মেজ (*fr.* মধ্য), *s.*, the second son (or brother). *24-Pargs.* Cp. মেজু and মেজুআ. The eldest son is called বড়, the second মেজ, the third সেজ, the fourth ন or ছোট সেজ, and the youngest ছোট. *24-Pargs.*

*মেজিয়া (*fr.* মেজ), *s.*, the floor (of a house). *Chit.*

মেজু
মেজুআ } (*fr.* মেজ), *adj.*, middle (applied to brothers), *and generally* the second eldest.

† মেজে
† মেজ্যা } (crp. of মেজিয়া), *s.*, the floor (of a house). *Chit.*

মেটিয়া, *s.*, small silver bangle. *Mald.* Cp. মাটিয়াল.

মেটেল (= মাটিয়াল), *s.*, a ditch, trench. *Pub.*

মেড়, *s.*, (1) the outside edge of the raised earthen floor (of a house), *Jess.*; (2) a raised platform or ledge in front of a house, *Dac.*

মেঢুআ, *s.*, a Hindustani, a man from Hindustan. *24-Pargs.*

*মেয়ে (*fr.* মাইয়া), *adj.*, female; *s.*, a girl, woman.

মেলইতে, *v.a.*, to thresh (paddy). *Bak.* Cp. মলাইতে.

মেলনা (?), *s.*, natural outflow of water. *Hug.* See মেলুয়া.

*মেলা (*fr.* rt. মিল্), *s.* (1) a concourse, assembly; (2) a large gathering of people for a religious or semi-religious purpose, a fair, *Gen.*; (3) a party, faction, *Chit.*; (4) a feast, banquet, *Chit.*

*মেলা (*fr.* rt. মিল্), *adj.* (1) assembled, congregated; (2) thronged, crowded, e.g. মেলা লোক a large gathering of people; (3) close together, contiguous, e.g. মেলা গ্রাম an adjacent village, *Jess.*; (4) numerous, extensive, large and wide, e.g. মেলা রাস্তা a large and wide road, *Bak.*

মেলা (connected with the word মল used to elephants, meaning 'step out,' ?), মেলা করিতে to step out, walk along, *E. Beng.*, মেলা দিতে to set out, start off, *E. Beng.*: মেলা যাইতে to go along, walk along, *Chit.*: but in *Jess.* মেলা দিতে to hang (clothes) out to dry.

মেলানি: হাল মেলানি, *s.*, unyoking the plough. *Chit.*

মেলিয়া, *s.*, a kind of reed with a triangular stem, growing in the Sundarbans. (= হেউলি).

মেলুয়া (?), *s.*, natural outflow of water. *Hug.* See মেলনা.

মেল্লাম, মেল্লা, মেল্ল past tense = মারিলাম, etc., from মারিতে to beat: তুই তারে কি দি মেল্লা what did you beat him with? *Chit.*

মেশ, *s.*, a kind of jute. *Tip.*

†মেসো, *s.*, mother's sister's husband. *24-Pargs.*

মৈঁজা (*fr.* মধ্য), *s.*, the floor (of a house). *Mald.* Cp. মেজ.

মোআপ, *s.*, wild cat. *Chit.*

মোখা (*fr.* মুখ), *s.*, entrance, opening, e.g. দুআরের মোখা the frame of a door. *Chit.*

মোচড় } *s.* (1) a bend, twist, or contortion *of any kind, especially* one caused by sud-
মোছড় } den force; (2) a bend, curve (as in a river).

*মোটা, *adj.* (1) stout, fat, plump; মোটাগাটা (*Raj.*) stout and strong, having a fine physique; (2) fat, corpulent; (3) thick, coarse.

†মোটে (*fr.* মোটা), *adv.* (1) in the gross, altogether; (2) at all.

†মোড় (*fr.* মুড়িতে), *s.* (1) a turn, bend, twist; (2) circumventing, e.g. মোড় দিতে to circumvent a person who is running away, so as to prevent his escape, *Hug.*; (3) a road that branches off from another, a cross-road, *24-Pargs.*; (4) cross-roads, junction of roads, *24-Pargs.*

*মোড়া (*fr.* মোড়), *s.* (1) a roll, anything rolled or wrapped up.; (2) a bundle (as of thread).

মোড়া (*fr.* মোড়), *adj.*, rolled or wrapped up. *24-Pargs.*

মোড় [this seems the right spelling], *s.*, a place where three or more roads meet, cross-roads. *24-Pargs.*

মোবা?, *s.*, a thin stick. *Bak.*

মোশাল (*for* *মশাল, Arab. مشعل), *s.*, a torch, flambeau. *Dac.*
মোহনা (মুহানা), *s.*, a conduit. *Hug.*
মোহরি (*fr.* মুঁহ ?), *s.*, a small drain, gutter, trench. *Dac.*
‡মোহানা (*fr.* মুহানা), *s.*, an outlet or drain (from a tank). *24-Pargs.*
মৌলা, *s.*, mat, matting (=চটাই). *Dac.*
ম্রিধা, *s.*, a head zamindari peon. *Jess.*

য

য. This letter, when the final member of a compound consonant, is always pronounced as *y* in Chittagong; and often so in the extreme east of Bengal.
যাও আইয়ন (verb. noun), *s.*, coming and going. *Chit.*
যাওনা (*fr.* যাইতে), *s.*, a water-passage, drain. *Hug.* Cp. যান.
যাচাই (*fr.* rt. যাচ্), *s.*, inquiry, investigation, search. *Tip.*
যান (*fr.* যাইতে), *s.*, an outlet or passage (for water), water-way, drain. *E. Beng.* Cp. যাওনা.
যান্তি (*fr.* যন্ত্র), *s.*, a nut-cracker. *Jess.*
যিঁঅৎ, *adv. relative*, where. *Chit.*
যুতিতে (*fr.* *যুত), *v.a.*, to unite, combine.
*যো (crp. of যোগ), *s.* (1) means, method; (2) fitness, suitability, *Raj.*; (3) capital, stock.
যোআন (*fr.* যুবন and Pers. جوان), *adj.*, possessing the full vigour of youthful adultness (as from 20 to 30 years). *Mald.*
যোআল / যোঁআল (*fr.* যুগল ?), *s.*, the yoke of a plough. *Jess.*; *Raj.*
*যোগ, *s.*, fitness, suitability, e.g. জমি যোগ ধরে the land becomes fit for cultivation. *Raj.*
যোগাড় (*fr.* † যোগাইতে), *s.* (1) application, effort, endeavour, *Bog.*; (2) means, expedient; (3) help, aid (by money or advice), *Chit.*; (4) supply of materials (for a workman).
যোগান (*fr.* † যোগাইতে), *s.* (1) buying goods on credit and paying afterwards, *Jess.*; (2) giving clothes to be washed.
যোগান্দার (*fr.* যোগান), *s.*, a shop-keeper with whom one deals on credit, with whom one has a running account. *Jess.*
যোগাল (=যোগাড়), *s.*, aid, assistance; advice. *Jess.*
*যোত, *s.* (1) strings fastening the bullocks' necks beneath when yoked; (2) traces (in harness).

র

র. This letter is commonly, and especially in C. Beng. confused with ন and ল; see notes to these two letters. In *N. Bengal* it is often (1) omitted from the beginning of a word, as আত for রাত, night; অসি for রসি, rope; and (2) prefixed to words beginning with vowels, as রাম for আম mango; রাছে, fo আছে, is, রৌষধ for ঔষধ, medicine.

† রওয়াক (Arab. رُوَاك), *s.* (1) an open unroofed masonry verandah (alongside a house), *24-Pargs.*; (2) a masonry plinth extending outside the basement (of a house), *Howr.*; *Dac.* Cp. রক.

রওয়াজা, *s.*, a Mag headman of a village. *Chit.*

রক, crp. of রওয়াক.

‡ রগ, *s.* (1) the temple, temporal region of the head; (2) the part of the forehead over the eye-brow.

† রগ (Pers. رگ), *s.* (1) a sinew; (2) a vein. *Raj.*

*রস, *s.*, used idiomatically to mean 'result, outcome'; e.g. তোমার রস আছে this is your doing, this is the result of your advice. *Jess.*

রসদী (fr. *রসদ), *adj.* (1) relating to *rasad* (provisions supplied to troops or officials on the march), *gen.*; (2) common to several co-sharers (as joint land), *Maim.*

† রসি, *s.* (1) a rope; (2) a measure of length, a linear bighā.

রাইয়তান (*fr.* রাইয়ত), *adj.*, occupied (as land) by raiyats or cultivators, belonging to raiyats. *Raj.*

রাউলি, *s.*, a Mag priest and teacher. *Chit.*

রাও (*fr.* রাব ?), *s.*, noise. *Dac.* (*vulgar*).

† রাঁধিতে (*rt.* লম্), *v.a.* (1) to cook (food, *esp.* rice). *Gen.* (2) to prepare by decoction, etc., e.g. লবণ রাঁধিতে to make salt by boiling off the water from salt water, *Chit.*

রাখ (*fr.* রাখিতে), *s.*, guarding, preserving, protection. *Jess.*

রাখালি (*fr.* *রাখাল), *s.*, a fee (levied by the pañcāit on the villagers) to pay for গরুবারি q.v. *Sylh.*

*রাগ, *s.*, force or current of a stream.

রাগ, *adj.*, firm, hard (as mud). *Bak.*

† রাগিতে (*fr.* *রাগ), *v.n.*, to become angry. *Chit.*

*রাঙ্গা (*fr.* রঙ্গ), *adj.* (1) red; (2) ruddy, tawny, e.g. রাঙ্গা পোকা the tawny insect (*Bak.* used euphemistically for a 'tiger'): *s.*, dawn, *Jess.*

রাজ, *s.*, a weaving instrument. *Chit.*

রাবাল, *s.*, the cock (of fowls). *Chit.*

রাজকর্ম, *s.*, the occupation of a mason, brick-building. *Dac.*

রাজভাগ, *s.*, the half-produce paid as rent by a bargādār to his landlord. *Jess.*

রাণ (Pers. ران), *s.*, the upper leg, the thigh. *Chit.*

রাতা, *s.*, a cock. *Bak.*

রাম দাও, *s.*, a kind of dāo. *Bak.*

রাল (= লাল), *adj.*, red; ruddy; brown. *Jess.*

রাষ্ট (? *fr.* Pers. راست), *adj.*, well-known, manifest; plain, clear. *Chit.*

রাস, *s.*, a concourse, a fair (= মেলা). *Jess.*

রাস্কে (*Engl.* rascal), *s.*, rascal, scamp.

*রাহদার (Pers. راه + دار), *s.*, a wayfarer, traveller. *24-Pargs.*

রাহা (Pers. راه), *adj.*, pertaining to a road; e.g. রাহা খরচা travelling expenses. *Chit.*

রিজুলি, *s.*, a screw-driver. *24-Pargs.*

রিপুই (*fr.* *রিপু; *fr.* Arab. رفو), *s.*, darning, mending, filling in (a thin spot in a cloth). *Jess.*

রুইতে (crp. of †রোইতে from causal root রোপ্?), *v.a.*, to transplant (paddy seedlings). Cp. রুহিতে.

রুক (Pers. رُخ), *s.*, direction, side. *Tip.*

রুকিতে (= †রোকিতে), *v.a.*, to obstruct, prevent, hinder, resist. *Dac.*

রুজীনা (*fr.* রোজ়), *s.*, a day's wages. *Dac.*

রুহা, *s.*, a bamboo rafter (in a kachha house). *Jess.*

রুহিতে = রুইতে.

রুতি (*fr.* রুইতে), *s.*, transplanting (paddy seedlings). *Jess.*

রেত (Hind. रेती), *s.*, a file (the instrument).

রেত, *s.*, waist-chain. *C. Beng.*

রেপা (*Engl.* wrapper?), *s.*, a wrapper, a chādar of plaid pattern.

রেয়াল, *s.*, a kind of bracelet (= পোইঞ্চি). *Chit.*

রেহায়ত, *s.*, deduction, subtraction. *Raj.*

রেহেন (Arab. رهن), *s.*, debt.

রেহেনী (*fr.* রেহেন), *adj.*, relating to a debt.

রো vocat. interjection = রে; e.g. মা রো O mother! *Raj.*

রো (crp. of রুহা?), *s.*, rafter? রো বাঁশ a rafter-bamboo. *24-Pargs.*

রোইতে (*রোপণ), *v.a.*, to transplant out rice (paddy) seedlings. *Chit.*

রোআক = রওয়াক. *24-Pargs.*

*রোক (Hind. रोक), *s.* (1) ready money, cash; *applied to the word* টাকা *it denotes* 'whole' *rupees*; (2) a purchase made with ready cash.

রোক (*fr.* রুক), *s.* (1) side, direction; (2) direction, aspect (in reference to the length of areas), e.g. উত্তর দক্ষিণ দিগে রোক the direction or length (of a plot of land) is north and south.

রোকিতে, *v.a.*, to obstruct, prevent. Cp. রুকিতে.

রোগবারি (*fr.* রোগ + *affix* wār?), *s.*, illness, ailment, disease. *Mald.*

রোজ় (Pers. روز), *s.* (1) a day, *Gen.* (2) a day's wages (= রুজীনা), *Dac.*

রোষাঙ, *s.*, Arakan. *Chit.*

রোহিত (Skt. লোহিত?), *s.*, sunshine, glare of the sun. *Chit.*

রৌড়িতে = দৌড়িতে.

রৌণ্ডগস্তী (*Engl.* round + Pers. گشت), *s.*, going the rounds (as a police constable, warder or chaukīdār).

ল

ল This letter is commonly and especially in *C. Beng.* confused with ন and র, and is in ordinary writing written like ন. See notes to those two letters.

লউ = লহু. *Chit.*

লওয়াত (loc. case of লওয়া, taking), *adv.*, subsequent to, after; e.g. এই মুকদ্দমা লওয়াত after this civil suit. *Chit.*

লক = লখ. *Raj.*

লক্ত (crp. of ‡ লগিত *fr.* rt. লগ্), *prep.*, close to, near. *Chit.*

লক্তি crp. of ব্যক্তি. *Jess.*

লক্ষ্মীবার, *s.*, Thursday. *Hug.*

লখ (*fr.* নখু?), *s.*, finger, *Raj.*; লখ করিয়া (*lit.*, holding up a finger?) keeping silence, silently, noiselessly, *Mald.*

লখি, *s.*, urine? লখি করিতে to make water, pass urine. *Raj.*

লগালগি (*fr.* rt. লগ্), *adv.*, close to, near. *Chit.*

*লগুড় (connected with Hind. লকড়, লকড়ী and লত্‌ড়), *s.* (1) a stick, staff; (2) a club; (3) an iron mace; (4) a finger, *Jess.*; বুড়ী লগুড় the thumb.

†লগে (*fr.* rt. লগ্), *prep.* (1) close to, near; (2) along with, with; তার লগে along with him; (3) in common with, on account of, by reason of *Dac.*, ; কিসের লগে by reason of what? (4) subsequent to, after, *Dac.*; খাওয়া লগে after a meal.

লগ্গি (Hind. লগ্গী), *s.* (1) a pole for pushing a boat with; a punting pole. Cp. লগুড়; (2) লগ্গি করিতে to sit down to make water (women's expression).

লগ্‌ড়া (connected with লগুড়), *s.* (1) a stick, a branch; (2) wood. *Mald.*

লগ্নী (*fr.* rt. লগ্; *orig. meaning*, applying, employing?), *s.*, money-lending. *Bak.*

লগ্‌লগ (*rt.* লগ্), *adv.*, closely adherent to, immediately following. *Bak.*

লঙ্গা, *s.*, low ground, ground that becomes a pool or swamp in the rainy season. *Dac.*

লড় (*fr.* †লড়িতে to shake, quiver), *adj.* (1) tremulous, indistinct (as in speaking), *Mald.*; (2) wavering, saying one thing at one time and another thing at another, *Dac.*; (3) untrustworthy, untruthful, deceptive, *Dac.*

লড় (*fr.* দৌড়), *s.*, running. লড় দিতে or যাইতে to run, run away. *Tip.*

†লড় চড় (*fr.* লড়িতে with চড় as jingle), *s.*, moving about, restlessness (as in sickness).

†লড়ি, (*fr.* লগুড়), *s.*, a small bamboo stick (used for driving cattle, = পাজন). *Jess.*

†লড়িতে (another form of নড়িতে, q.v.), *v.n.*, to quiver, shake, vibrate. *Gen.*: *v.a.* to leave, quit, abandon, *Dac.*

লতী, *s.* (with কাণ), the lobe of the ear. *Dac.*

লম্বরী, *s.*, a peon. From *Engl.* 'number,' each peon having a number on his badge. *Chit.*

*লম্বা (*fr.* লম্ব), *adj.* (1) long; লম্বা ঘর (*Chit.*) a prison, jail; (2) tall.

লম্বিয়ে (*fr.* লম্ব), *adj.* (1) long; (2) tall. *Chit.*

লয়, *s.*, Sir. It is also used interrogatively when a person does not understand what is said to him, 'Sir?'. *Chit.*

লয় (*fr.* লগে), *prep.*, with, along with. *Chit.*

লহনা (cp. Hind. লহনা; *prob. fr.* Arab. رهن; cp. রেহেন), *s.*, mortgage-deed. *24-Pargs.*

লহু (Skt. লোহিত), *s.*, blood.

লা (*fr.* নৌ), *s.*, a boat. *Raj.*

লা a particle added to numerals to give definiteness (= টা); e.g. আঠ লা eight. *Dac.*

লাই (*fr.* †লাগি, cp. লাগ; or *fr.* লইয়া, cp. লওয়াত), *prep.*, by reason of, on account of. *Chit.*

লাই, *s.*, a small closely-constructed basket. *Chit.*

লাইক (Arab. لائق), *adj.* (1) fit, suitable, adapted; (2) capable, qualified, able; (3) fit for cultivation (as land), culturable; (4) mature, adult; (5) fit for sexual intercourse.

লাইতাই (*prob. fr.* লাক্‌তাই), *s.*, an outer or secondary verandah. *Chit.*

লাইল (crp. *fr.* আইল q.v.), *s.*, a ridge of earth dividing fields. *E. Beng.*

লাক্‌তাই, *s.*, verandah. *Chit.* Cp. লাইতাই and লাতিয়া.

লাগ (*fr.* †লাগিতে), *adv.* and *prep.*, touching, close to, very near. লাগ পূবে (*Raj.*) immediately on the east. লাগ পাইতে (*Chit.*) to catch, seize.

লাগন (cp. লগুড়), *s.*, a long bamboo stick or pole. *Mald.* Cp. লাগ্না.

লাগাও (*fr.* †লাগা), *adj.*, touching, immediately adjoining, very close to.

লাগায়ত (*fr.* †লাগাইতে), *prep.*, up to, to, as far as. *Chit.*

†লাগিতে (*rt.* লগ্), *v.n.* (1) to adhere, stick to; (2) to be in contact with, touch; (3) to come into contact with, to hit; (4) to apply one's self to, begin, commence; (5) *v.a.* in *E. Beng.*, to apply, make contact, e.g. চিরাগ লাগিতে to apply (light) to a lamp, to light a lamp.

লাগিয়ত (*fr.* †লাগিতে), *adj.* (1) assigned (to raiyats), leased out, sublet; (2) planted out, transplanted, *Chit.* লাগিয়ত করিতে to lease out (land); to transplant (paddy seedlings), *Chit.*

লাগ্না (*fr.* লাগন), *s.*, a long bamboo stick or pole. *Mald.*

লাচা (Hindi লাসা), *s.*, bird-lime. *Chit.* Cp. লাল্সা.

লাজবান (*fr.* না + জবান?), *s.*, bad language, indecent words. *Raj.*

লাজ্যে, *s.*, dung, droppings (of deer, etc.). *Bak.*

লাড়, *s.*, the paddy along the border of a field, that bends over into the next field. *Tip.*

লাড়িতে (*fr.* লড়িতে), *v.a.* (1) to shake, agitate, *Gen.* (2) to tether (cattle) for grazing (so as to allow them to move about in one spot), *Dac.*

লাতাকত (*fr.* Pers. ن + Arab. طاقت), *adj.*, weak, infirm, exhausted. *Dac.*

লাতিয়া, *s.*, a verandah. *Chit.* Cp. লাক্তাই.

লাদনা (connected with লাগন and লাগ্না?), *s.*, a stick, staff. *Mald.*

লামাত (*fr.* লামিতে), *adv.*, below, down stream.

লামাতে, *prep.* and *adv.*, below, beneath. *Sylh.*

লামিতে (*for* নামিতে), *v.n.*, to go down, step down, descend.

লাম্চা / লাম্চি (*fr.* লামিতে,), *adj.*, low, low-lying (applied to land). *Khul.*

লারে *adv.*, gently. *Chit.*

লাল (Pers. لال), *adj.* (1) red, reddish; (2) ruddy brown. It is applied to objects (as cattle) which have any degree of ruddiness in their colour. লাল-ডুরিয়া, *adj.* (cloth) with red stripes crossed. লাল পাড়িয়া, *adj.* (cloth) with a red border.

লাল (cp. নালী), *adj.*, rice-growing. লাল জমি paddy land. *Khul.* নালী is said to be the corrupt form of লাল.

লাল্সা (*fr.* †লাল saliva), *s.*, mucous or viscous matter. *Raj.*

লুট তরাজ (*fr.* লুট + Pers. تراش), *s.*, plunder and robbery. *Hug.*

লুল (*Engl.* 'rule'), *s.*, a baton or short staff. *Tip.*

লূলা, *adj.*, paralyzed in the arms and legs. *Dac.*

লেই, *s.*, flour-paste, paste. Haughton gives লেহাই.

লেওয়া (*for* নেওয়া *fr.* নিম্ন?), *adj.*, low, depressed, low-lying. *Raj.*

লেওয়া, *s.*, a flail made of bamboo with tendrils of the wild cane. *Bak.*

লেঙ্গটা (*fr.* নগ্ন?), *adj.*, naked. *Chit.*

লেছ, *s.*, tail (of any animal, fish, reptile, etc., but not of a bird). *Chit.*

*লেজ, *s.*, tail (of an animal). *Jess.*
লেঙ্গা, *s.*, spear. *Bak.*
লেটা, *s.*, low jungle (such as grows on chars). *Raj.*
লেটাইতে =লেডাইতে. *Chit.*
লেডন, *adv.*, lying on one's back, supine. *Chit.*
লেডাইতে, *v.a.*, to lay down or place on the ground. *Chit.*
*লেপ, *s.*, a garment stuffed with cotton and quilted, a warm cloak.
লেয্য crp. of ন্যায্য. *Jess.*
লেল্‌ফা =নেল্‌কা. *Bog.*
লেহাজ (Arab. لحاظ), *s.*, thought, opinion; conjecture. *Dac.*
লোই, *s.*, kind of creeping plant. *Raj.*
লোকগুণ্‌তি (লোক and গুণিতে), *s.*, a census. *Pub.*
লোগি =লগ্নি. *Jess.*
লোট (*fr.* লোষ্ট), *s.* (1) mud, dirt.; (2) any viscous substance, *Tip.*
লোড়া (=লোটা), *s.*, a lota.
লোদ =লোট. *Tip.*
*লোম, *s.*, the hair of the body; (2) *vulg.* the hair of the head, e.g. লোম ছিঁড় (*lit.*, tear your hair) an expression of utter contempt, meaning 'you can't do anything to me,' *Dac.* (2) *Prak.* *B. gives*, the tail (of an animal).
লোম্‌ছা, *s.*, a graze, abrasion (of the skin). *C. Beng.*
লোল, *s.*, saliva, spittle. *Dac.* Cp. †লাল.
†লোলক (*fr.* *লোল), *adj.*, pendant, swinging: *s.*, an ear-ring, *Chit.*
লোহাবালা (লোহা ? + বালা), *s.*, a kind of bracelet. *Mald.*
লৌকা =*নৌকা. *Jess.*
লৌড় (=দৌড়), *s.*, running. *Dac.* লৌড় দিতে to run, run off.
লৌড়িতে (=দৌড়িতে), *v.n.*, to run, run off. *Dac.*

শ

শওয়াল = ছওয়াল.
শকুল (for *শকুন), *s.*, a vulture. *Chit.*
শয়াল, *s.* (1) a foot-track through jungle, a jungle-path; (2) a passage cut through a forest (where an embankment or survey is to be made).
শয়িতে (root শী), *v.n.*, to lie down. *Chit.*
শরক (women's word for শব্দ), *s.* (1) a word; (2) a call, shout. *Jess.*
শরপরে, *s.*, a kind of hard light mud that covers a field. *Chit.*
*শরা, *s.*, an earthenware cover. *Chit.*
শরারতি (Arab. شرارت), *s.*, perversity, forwardness, *Chit.* শরারতি করিয়া not acting willingly, *Chit.*
শরির (*fr.* শরীর), *s.*, the body; (2) the pudenda, *esp.* muliebria, *Mald.*
শরিল = শরির. *N. Beng.*
†শলাই (*fr.* শলাকা), *s.* (1) twisted straw used for sweeping, *Dac.*; (2) a match (for lighting), *gen.*, as দিয়াঁশলাই.

শল্‌তা (connected with † শলাই), *s.*, a torch. *Raj.*

শাই? *s.*, hurt, damage, injury. *Bak.*

শাইত (*fr.* *শয়িত ?), *s.*, a shelf, or tier in a series of shelves. *Raj.*

শাউড়ি = শাশুড়ী. *Jess.*

শাগরি (Pers. شاگرد), *s.*, the pupil of a Mohammedan teacher (اُستاد). *Dac.*

*শাড়ী (শাটী), *s.*, the cloth worn by women, enveloping the body.

†শাদী (Pers. شادی), *s.*, the first marriage among Mohammedans. Subsequent marriages are called নিকাহ.

†শান (*fr.* শয়ন ?), *s.*, a floor. *Jess.* Cp. সান.

শারা, (cp. শরক), *s.*, sound, noise. *Mald.*

†শারু (connected with † শালা *শ্যাল?), *s.*, wife's sister's husband. *Mald.*; *24-Pargs.*

শালা (*fr.* শ্যাল), *s.* (1) a wife's brother, *Gen.* (2) a wife's younger brother, *Dac.*

শাল্‌তি (*fr.* শাল), *adj.*, made out of the śāl tree; *s.* (1) a ḍoṅgā made of śāl; (2) a ḍoṅgā, a dug-out (boat).

*শাসন with করিতে (1) to command, govern; (2) to discipline, correct, punish; (3) to threaten, express ill-will.

*শাসিত, *adj.* (1) commanded, governed; (2) disciplined, corrected, punished; (3) protected, guarded (as by a ditch or fence), *Jess.*

শাহানা (Pers. شاهانه ?), *s.*, a zamindar's messenger (who summons raiyats to the cutcherry). *Raj.*

‡শিক, *s.* (1) an iron bar, *Gen.* (2) the iron frame-work of an umbrella, *Mald.*

শিক্‌মী (Pers. شکم), *adj.* (applied to land tenures) comprised within (a superior tenure), subordinate, e.g. শিক্‌মী তালুক a subordinate ta'alluḳa held under a large ta'alluḳa.

শিকলি (*fr.* *শিকল), *s.*, a chain, fetter. *24-Pargs.*

শিকস্তী (Pers. شکسته), *s.*, diluvion.

শিগল (*fr.* *শিকল), *s.*, a chain, fetter. *Dac.*

শিঙ্গিরি, *s.*, a water-herb. *Jess.*

শিথি, *s.*, a circular gold ornament for the forehead. Cp. সিথি.

শিয়ানা, *adj.*, tall, high. *Mald.*

*শিয়াল (*fr.* * শৃগাল), *s.* (1) a jackal, *Gen.* (2) a tiger, *Bak.*

শিয়ালা (*fr.* শিয়াল), *adj.* coloured like a jackal, brown. *Raj.*

শিরে (*loc. case of* শির the head), *adj.* (1) upon, *Chit.*; (2) at, about, e.g. সময় শিরে about the time, *Dac.*

শির্কি, *s.*, a small tent (such as is used by wandering Naṭs). *Raj.*

শিষা (*fr.* শীর্ষ ?), *s.*, a tongue or spit (of land). *Raj.*

শীঘির = শীঘ্র.

শীজ, *s.*, flame of fire. *Chit.*

(শীতন) শীতান (*fr.* rt. স্থা), *s.* (1) the place where the head lies in sleeping, *Jess.*; (2) the place directly at the top of the head when a person is lying down, *Jess.*

শীতি, *s*, forehead. *Jess.*

শীর্‌ণি, *s.*, offering oblations (of any kind) to an idol. *Mald.*

শীশা, *adj.*, small, tiny (?); শীশা খাল a small khāl or creek.

শুআ (crp. of Arab. شُبْه), *s.*, doubt. *Mald.*

শুইতে = শুখিতে. *E. Beng.*

শুখান (*fr.* শুখিতে), *s.* (1) dry ground; (2) the bank (of a river). *Raj.*

শুখিতে (*fr.* শুষ্ক), *v.n.*, to dry, dry up, evaporate.

শুচ কর্ম্ম (*fr.* শুচি), *s.*, cleaning one's self with water after stool. *Dac.*

*শুদ্ধ, *prep.* (endowed with), together with, with; e.g. মাছ শুদ্ধ আইয়ে he has come with the fish. *Chit.*

শুনা (*শূন্য), *adj.* (1) empty; (2) deserted, forsaken. *Dac.*

শুরাত (Arab. شُهْرَت), *s.*, hearsay, common report. *Bak.*

শুল্‌পা
শুল্‌পি
শুল্‌ফি } *s.*, a long spear. *Mald.*; *Tip.* Cp. সর্কি.

শূখ্‌না (*fr.* শুখিতে), *adj.*, dried up, dry. *E. Beng.*

*শূন্য করিয়া, *verb. particip.* (*lit.* placing in emptiness ?) lifting up in both arms, carrying (a person) in both arms. *C. Beng.* Cp. হাত শয়ন.

শূন্যভাগী (শূন্য + ভাগ), *s.*, an employé who is paid by means of a share of the profits of a business. *Raj.*

শূলা (*শূল), *s.*, small pointed excrescences (that spring up from the ground out of the roots of sundrī trees). *Bak.*

শূলি (*শূল), *s.*, the pin in a yoke (one on each side of the bullock's neck). *N. Beng.*

শেওলি দাও, *s.*, dāo for trimming leaves from date trees. *24-Pargs.*

শেষে (loc. of *শেষ), *prep.*, after; e.g. আমার শেষে after me. *Chit.*

শোতা (শয়িত), *adj.*, lying down. *Tip.*

শোধ (Skt. শোধ ?), *s.*, (*orig. meaning*, clearing up ?) questioning, interrogation. শোধ করিতে to question, interrogate. *N.* and *C. Beng.*

শোধাইতে (শোধ), *v.a.*, to question, interrogate. *N. Beng.*

† শোর (Pers. شور) *s.* (1) cry, outcry; (2) clamour, hubbub, noise; *Gen.* শোর পাড়িতে to cry out, make a clamour, *Dac.* শোর শার (শার is from শারা or is a jingle) clamour, hubbub, noise, *C. Beng.*

শোরাত (Arab. شُهْرَت), *adj.*, divugled, made known, published. *Dac.* Cp. শুরাত.

শোল, *adj.*, hollow. *Chit.*

শ্যাম, *adj.*, second-class (as land). *Birbh.*

শ্যালোক (§ শ্যালক or *শ্যাল + লোক), *s.*, a person related to one through one's wife, wife's relation. *Chit.*

শ্রীহট্ট, *s.*, Sylhet.

স

স. This letter is often turned into *h* in East Bengal, especially at the beginning of a word; and among the illiterate people there the converse is often found. Instances of both changes will be found here.

সঅল (crp. of সকল), *adj.*, all, every. *Chit.*

সই, *adj.*, taut, tight, tense. *Gen.*

সইয়ালা (*fr.* সই?), *s.*, a close friend, an intimate (applied to women who have gone through a ceremony for the purpose). *Tip.*

সএরি (Hindī सवेरा), *adv.*, early, in the morning. *E. Beng.*

সওয়ারি (Pers. سوار), *s.*, a palki. *Saugor.*

সওয়াল see শওয়াল.

*সংসার, *s.* (1) worldly life and concerns; (2) domestic life and concerns; (3) *Jess.* household, house.

† সকালে (স+কাল), *adv.* (1) betimes in the morning, early in the morning; (2) early, soon; *Gen.* (3) quickly, without delay, *Chit.*

সজন (স্বজন?), *s.*, a wife's sister's husband. *Chit.*

সগ্রা, *s.*, fishing basket. *Sylh.*

‡ সঞ্চরণ, *s.*, roaming about (as of wild animals).

সঞ্জাল, *s.*, a fire for warming a house. *Rang.*

সঠিক (স+ঠিক), *adv.*, accurately, definitely, positively. *Jess.*

সৎ (*fr.* সপত্নী?) a word used in compounds to denote "step-" relationship; e.g. সৎমা step-mother; সৎশাশুড়ী step-mother-in-law.

*সতা (*fr.* সৎ), *s.*, a co-wife.

সতাই (*fr.* সৎ), *s.*, step-mother. *Chit.*

সতালা (cp. সতাই), *adj.*, born of the same father but of a different mother, step. *Bak.* Cp. সতালু, সতেলা.

সতালু, *adj.*, having a 'step' relation; e.g. সতালু শাশুড়ী a husband's or wife's step-mother. *Raj.* Cp. সতালা.

সতিনী (*fr.* *সপত্নী; cp. *সতিন), *s.*, a co-wife, rival wife. *Chit.*

সতীঝী (*fr.* *সতিন+ঝী), *s.*, a co-wife's daughter. *Chit.*

সতু (শতু? *fr. rt.* ষ্ণী?), *s.*, making to lie down, laying down, depositing. *Mald.*

সতেলা, *adj.*, of the half-blood; e.g. সতেলা ভাই = a half-brother. *24-Pargs.* Cp. সতালা.

সৎমা (*fr.* *সতিন?+মা), *s.*, step-mother. *Bak.*

*সত্র, *s.* (1) a sacrifice; (2) a Hindu religious endowment, *Sibsagar.*

সদর (Arab. صدر), *s.*, the front side (of a house), front door, *Gen.*; সদরে outside the front door.

সদাউত (Arabic?), *s.*, registration. *Chit.*

সদ্দর (*fr.* *সহোদর), *adj.*, uterine, born of the same mother, *Chit.*

সদ্ধ (*fr.* সাধ্য?), *adv.*, to the utmost of one's power, as much as one can. *Bak.*

সন্দুআ, *s.*, a worker in ores, smelter. *Dac.*

*সন্ধ্যা, *s.* (1) the evening twilight. *Gen.* e.g. সন্ধ্যা ভূর হইয়া গিয়াছিল evening had quite ended and it was dark, *Tip*; (2) the evening prayer or light (among Hindus), e.g. সন্ধ্যা করিতে to say the evening prayers, *Jess.* সন্ধ্যা লাগাইতে to light the evening lamp, *Jess.*

সনমা (*fr.* সৎ *above* + মা?), *s.*, sister's mother-in-law. *Mald.*

*সপ (Arab. صف), *s.* (1) bamboo-matting; *Jess.*; (2) mat, small piece of matting, *Raj.*

সফ্, *s.*, pulp, soft substance. *Jess.*

সবরে (cp. সএরি), *adv.*, early, in the morning. *Chit.*

সব্‌জী (Pers. سبز), *s.* (1) any pot herb, vegetable, greens, *Gen.* (2) a green ear-pendant, *Raj.*

সমত্ত, *adj.*, young (as a young wife). *24-Pargs.*

সমা (*fr.* *সময়), *s.*, time, period of time. *Mald.*

*সমান, *adj.* (1) similar, alike, same, *Gen.* এক সমানে at the same time, in one company, together, *Tip.*; (2) level, e.g. সমান হইতে (*lit.* to become level) to attain its full height (as the flood tide), to reach high water, *Nautical.*

সমিন্দিয়া for সম্বন্ধিয়া. *Jess.*

সমুক, *adj.*, all.

সম্‌খি = সম্মুখে. *Jess.*

সম্বন্ধিয়া (*fr.* *সম্বন্ধী), *s.*, a wife's brother (= শালা). *Jess.*

সয়াল = শয়াল. *Saugor.*

†সর্‌কার, *s.*, a surname given to Mohammedans who can read and write. *Pub.*

সরঞ্জাম (Pers. سر انجام), *s.* (1) apparatus, furniture, utensils, materials, chattels, *Gen.* (2) goods, articles, things, *Dac.*

†সর্‌দার, *s.* (1) a headman, chief, leader, *Gen.*; (2) a lāṭhiyāl, *Dac.*

*সরস (স+রস), *adj.*, superior, excellent, better in quality. *Jess.*

†সর্‌হদ্দ (Pers. سرحدّ), *s.*, boundary, border, limit.

সরা, *s.*, a small earthen plate or saucer (used as a cover for pots). *C. Beng.*

†সরাইতে (caus. of সরিতে), *v.a.*, (1) to cause to move, put into motion, *Gen.* (2) to put into use, make use of, use, *24-Pargs.*

সরাঙ্গ (Pers. سر هنگ), *s.*, the captain of a large boat or small vessel.

সরাণ (*fr.* †সরাইতে), *s.* (1) imparting motion, moving; (2) a high way, road.

সরাদ্দ = †সর্‌হদ্দ. *Jess.*

সরাব = সরাইবা, *s.*, removing.

সরাসরী (*fr.* সরাসর moveables and immoveables?), *adj.*, with জোত a jot with the occupancy right but enhanceable rental. *N. Beng.*

সরি আম, *s.*, a kind of mango. *Hug.*

সরিণ (erron. for হরিণ), *s.*, a deer. *Bak.*

†সরিতে (rt. সৃ), *v.n.* (1) to move, move away; (2) to shift, slip; (3) to be put into use, be used.

সরী, *s.*, a small stick, switch. *Jess.*

সরে, *adv.* commonly, ordinarily, (for use.) *Chit.*

সরেওয়ার, *adj.*, all, entire, whole (*fr.* সর্ব?).

সরেঁয়া (সরেঙ্গা?), *s.* (with or without না) a small boat. *Chit.*

সরেঙ্গা, *adj.* (with or without নৌকা) an open boat made out of a single tree, a dug-out. *Chit.*

সর্কি (*fr.* শলাকা?), *s.*, an iron-pointed bamboo staff, a spear. *E. Beng.* Cp. শুল্‌পি.

সলক, *s.* (1) light, illumination, blaze; (2) the glare or reflection from a fire or light, *Raj.* Cp. সলিতে.

সলা, *s.* (1) a large and very thick bamboo post, *Dac.*; (2) the shaft of a weapon, *Sylh.*

সলিতে, *s.*, a lamp. *Jess.*

সহসত্ত্ব (সহ+সত্ত্ব), *adj.*, pregnant. *Pub.* (*common*).

সহাগা (*সোহাগা, সোআগা), *s.*, borax. *Jess.*

সহাম (Arab. سهم), *s.*, share, allotment, portion. *Rev.*

সহি (Arab. صحيح), *s.*, signature; টেরা সহি signature by a mark. Haughton gives সঈ.

সাইত, *s.*, specimen, sample. *Raj.*

সাউত, (সপত্নী) *s.*, a co-wife. *24-Pargs.*

সাউদ *s.*, master, lord. *Dac.* (*vulgar*).

সাঁখো *s.*, a light bridge made of bamboo or a single tree. Haughton and the Prakṛitibād Abhidhān give সাঁকো; but I have always heard it pronounced সাঁখো. Forbes gives सांखो and quotes Binning that the word is commonly used in the Carnatic.

সাঁজ (*fr.* *সন্ধ্যা), *s.*, evening twilight, evening. Haughton gives সাঁঝ.

সাঁজিরা (*fr.* †সাজ), *adj.*, fastened together, coupled (as two cattle when grazing). *Jess.*

সাঁজিল = সাঁজ. *Jess.*

সাঁতা
সাঁতার } (*fr.* † সাঁতরিতে), *s.*, swimming; সাঁতার জল unfordable water. *Raj.*

সাঁধাইতে (*fr.* †সাঁধিতে), *v.a.*, to enter, go into, penetrate. সান্ধাইতে.

†সাঁধিতে, *v.a.*, to enter, go into, go within, penetrate. Cp. সেঁধিতে.

সাঁপ (সর্প), *s.*, a snake, serpent.

*সাক্ষাৎ (Skt), *indecl. adv.* (1) before the eyes, in sight of, in presence of; (2) with one's own eyes; (3) eye to eye, visibly, manifestly: *adj.*, patent; সাক্ষাৎ ভাই (one's) own brother, full brother, *Dac.*: *s.*, an interview, meeting, *gen.*

সাখো = সাঁখো.

সাঙ্কালি, *s.*, small gunny bag. *24-Pargs.*

সাঙ্গা, *s.*, a second or nikāh marriage (applied to women). *Chit.*

সাজবন্ধ, *adj.*, armed, accoutred. *Sylh.*

†সাজাইতে, *v.a.*, (1) to dress, accoutre; (2) to arrange, put in order, put to rights; (3) to fabricate, concoct (a false story).

সাজাল = সঙ্গাল. *Rang.*

সা জী (*fr.* সাহা জী), *s.*, a money-lender, mahājan. *Jess.*

সাজু, *s.*, a term applied to the youngest of three children. *Jess.* See সেজ.

সাঞ্জাল (*fr.* *rt.* সঞ্জল্), *s.*, burning incense (at evening to drive mosquitoes away), fumigation. *Raj.*

সাড়াশী (*fr.* *সন্দংশ), a pair of pincers. *Jess.*

সাতাতো (*fr.* সতাই?), *adj.*, born of the same father and a different mother. *Chit.*

সাদা (Pers. سادہ), *adj.*, white. Haughton gives শাদা.

সাদায়, *adv.*, without objection, readily.

*সাধক, *s.*, a zamindari peon. *Dac.* (*vulg.*)

সাধা (for সাদা), *adj.*, white.

সাধা, *s.*, tobacco mixed with chūṇā (lime) and used for chewing. *Dac.*

†সাধিতে, *v.a.*, to enjoin, impress on. *Bak.*

*সাধ্য, *adj.*, able, capable. *Chit.*

সান, *s.*, an open unroofed plinth or platform outside a house. *Mald.* Cp. শান.

সান্দাইতে, *v.a.*, to push in (as a thing into water). *Chit.*

সান্দাইতে
সান্ধাইতে } (caus.), *v.a.*, to enter, go into. Cp. সাঁধাইতে and সেঁধিতে.

সাবুদ (Arab. ثابت and ثبوت), *s.*, proof. *Hug.*

*সামান্য, *adj.* (1) common, general, universal, *Gen.* (2) common, of low class or position, *Gen.* (3) of low degree, insignificant, small, e.g. সামান্য সূর্য্য আছে (*lit.* there is very little sun) the sun is nearly setting, *Hug.*

সাবক, *s.*, the frame of the roof, on which the thatch is laid. *Chit.*

সার্‌কুট (সার+কুট), *s.*, a dung-heap, rubbish-heap. *Hug.*

সার্‌বন্দি (?+Pers. بند), *s.*, a row, line (of houses). *Mald.*

সারা, *adj.* (1) accomplished, performed, finished ; (2) the place of finishing or ending, limit, e.g. ডোঙ্গা সারা the place where dongās must stop, unable to go further. (Prob. *fr.* †সারিতে).

সারিতে, *v.a.*, to take away (prob. caus. *fr.* সরিতে). *Dac.*

সাল্‌বোট, *s.*, an oval platter. *Jess.* (*Engl.* salver ?)

†সালিয়ানা (Pers. سالیانه), *s.*, a receipt for a year's rent paid. *Dac.*

সিং
সিংজী } (*fr.* সিংহ), *s.*, a barkandāz, a retainer armed with a gun. *Raj.*

সিকা (= *সিকি), *s.*, a quarter-rupee. *Dac.*

সিখর, *s.*, a root (= মূল). *Jess.*

সিঙ্গলা, *s.*, a small goad or stick (for driving cattle). *Sylh.*

সিচিতে, *v.a.*, to bale out, empty (as water from a tank). *Chit.* Cp. †সেঁচিতে.

সিজিল, *s.*, searching, looking for, finding, collecting. *Dac.*

সিথি
সিথিপাতি } = শিথি. *24-Pargs.*

সিনি, *s.*, a wife (=স্ত্রী). *Jess.* (Prob. modifn. of সিরি).

সিন্দুর (*fr.* *সিন্দূর), *s.* (1) vermilion, *Gen.* (2) a mark placed by Mohammedan women on their foreheads indicative of their husbands' being alive, *Jess.*

সিন্ধ (=*সিঁধ), *s.*, a hole made through a mud wall or floor by house breakers.

সিন্ধকাটা (= †সিঁধকাটা), *s.*, a chisel used for cutting sindhs. *Raj.*

সিরি (*fr.* স্ত্রী), *s.*, a woman. *Mald.*

সিরে see শিরে. *Dac.*

সিকি, *s.*, small cloth tent (used by wandering Naṭs).

সিষা see শিশা. *Raj.*

সীদি (crp. of স্মৃতি), *s.*, remembrance, recollection. *Raj.*

সীম (*fr.* *সীমা), *s.*, a boundary, e.g. সীম বাঁধিতে to fix a boundary. *Tip.*

সুইচা = সুচিয়া. *Chit.*

সুকি = সিকি. *Chit.; Raj.*

সুকুম crp. of হুকুম a command. *Dac.*

সুগম্‌মতে (*fr.* সু+গম+মতে), *adv.*, very well. *Chit.*

সুচিয়া, *s.*, a bamboo yoke for carrying paddy. *Chit.*

সুজনি, *s.*, a coloured counterpane, a quilted sheet. *Raj.*

সুত্তর (*fr.* সূত্র ?); সুত্তর করিতে to mark out (a piece of ground) with pins. *24-Pargs.*

সুধা, *adj.*, open, vacant, free (as a spot of ground). *Tip.*

সুধাসুধি (*fr.* সুধা ?), *adv.*, for no reason at all, quite unprovokedly, in sheer wantonness. *Dac.*

সুন্ধি (crp. of সম্বন্ধী ?), *s.*, a wife's elder brother. *Dac.*

সুপদ = সুপাদ. *Jess.*

সুপাদ = সুবাদ. *Jess.*

সুবাদ (crp. of সম্বন্ধ ?), *s.*, kinship, relation, connexion. *24-Pargs.*

সুরা, *s.*, a track worn by wild animals. *24-Pargs.* (Arab. سُراغ ?).

সুরি, *adj.*, narrow.

সুরিতে, *v.a.*, to sweep. *Chit.*

সুর্কি (*fr.* সুরি ?), *s.*, a narrow strip (of land). *Raj.*

সুর্শা, *s.*, a staple for fastening a padlock and chain.

সুল্‌পি, *s.*, a spear. *Tip.* Cp. শুল্‌পি.

সুল্‌ফি, *s.*, a spear. *Sylh.*

সূআন = সূপান. *Chit.*

সূতরী (*fr.* সূতার), *s.*, carpentry.

সূতা (crp. of স্মৃতি ?), *s.*, remembrance, recollection. *Mald.*

সূতার (*fr.* সূত্রধার ?), *s.*, a carpenter.

সূপান, *s.*, a rudder (in a large boat).

সৃষ্ট, *s.*, seeking, search (= তলাশ). *Jess.*

সেঁচর, *s.*, the eave of a roof. *Raj.* Connected with † সেঁচিতে, সিচিতে ?

সেঁধিতে, (= সাঁধিতে), *v.n.*, to enter, go in.

সেক্ষণি (*fr.* সে+ক্ষণ), *adv.*, at that moment, then. *Raj.*

সেঙ্গা (= সাঙ্গা), *s.*, a second or nikāh marriage, *Hug.*; the remarriage of a widow among low Hindu castes (unaccompanied with any religious ceremony), *24-Pargs.*

সেছুর, সেছুর পারিতে to move along with great difficulty, to drag one's self along. *Dac.*

সেজ, *s.*, a term applied to the third son (or brother), where there are four or more. *24-Pargs.* ছোট সেজ a term applied to the fourth son or brother. *24-Pargs.* See মেজ and সাজু.

সেজার, *s.*, a porcupine, hedge-hog. *Bak* Cp. † শেজারু and † সজারু.

সেত (seta; *fr.* সে), *pronom.* so much, e.g. সেত দূর so far, so much. *Bak.*

সেবাদাসী (সেবা+দাসী), *s.*, (the general term describing) a widow who becomes concubine to a baishṇab. *Hug.*

† সোঁতা (*fr.* *স্রোতস), *s.*, flowing channel of water. = সোতা.

সোঁদ (Hind. सुध ?), *s.*, senses, consciousness. *Raj.*

সোতা (*fr.* *স্রোতস), *s.*, a flowing channel of water, a water-channel in a river (as a channel between a char and the river bank).

সোরজদা, *s.*, salt-water inundation. *Chit.*

সোল, *adj.*, low (cultivated land). *Bank.*

সোহরা (Arab. شُهرة ?), *s.*, publication by beat of drum (?) (= ঢোল কুপি ?). *Jess.*

*স্থিত, *s.*, total gross rental (of an estate).

*স্বীকার, *s.* (1) assent, consent; (2) acknowledgment, admission, avowal; (3) acceptance, agreement, *gen.*: স্বীকার করিতে (or পাইতে in *E. Beng.*) to assent, acknowledge, etc.

হ

হ. This letter is often confused with স, as explained under that letter. In Chittagong it often represents a ক.

হউড়ী (crp. * শাশুড়ী), *s.*, mother-in-law. *Chit.*

হউর (crp. *শ্বশুর), *s.*, father-in-law. *Chit.*

হকল (= *সকল), *adj.*, all. *E. Beng.*

হকলিন (crp. *সকলগুলিন) everything. *Chit.*

হক্কাই, *s.*, a gem-cutter, jeweller. *24-Pargs.*

হগাম, *s.*, riot, affray. *Mald.* Cp. † হঙ্গামা.

হঙ্গী (সঙ্গী), *adj.*, connected with, attached to, associated. *Chit.*

হঙ্গাগ (*fr.* সম্ + জাগিতে? *or from* সংজ্ঞা?): হঙ্গাগ হইতে, *v.n.*, to awake. *Chit.*

হড়ি (crp. হউড়ী i.e. শাশুড়ী), *s.*, mother-in-law. *Chit.*

হদ, *s.*, road, pathway. *Tip.* হদখাল a khāl alongside which is a road or path. *Tip.*

হদা (*fr.* হদ a boundary? Arab. حدّ), *adv.* (1) in all, in the aggregate; (2) at the outside, not more than.

হনে (crp. কোনে), *pron.* who? *Chit.*

হনে (*সঙ্গে ?) *prep.* on, depending from, with (?). *Mald.*

হপ, *s.*, a thin place in a piece of cloth. *Jess.*

হরি, *s.*, shield. *Pub.*

হল (crp. হকল, i.e. সকল), *adj.*, all. *Chit.*

হলঙ্গা, *s.*, a pointed bamboo (used as a spear). *Pub.*

হলুআ (*হাল), *s.*, ploughman. *Mald.*

হলুন (*for* হকল্‌গুন i.e. সকলগুলিন). *adj.*, all; e.g. মানুষ হলুন "all the men." *Chit.*

হাইচ, *s.*, side. *Tip.*

হাইজা (Arabic هَيضه), *s.*, cholera. *Chit.*

হাইতে (†হাঁকিতে), *v.a.*, to drive, drive away. *Bak.* হাই দিতে to drive away. *Bak.*

হাইর *adj.*, sweet-smelling. *Chit.*

হাইল (হাল), *s.* a stern-oar used as a rudder.

হাইল, *s.*, (with ধান), āman paddy reaped in the cold season. *Chit.*

হাউড়, *s.*, a narrow tract of low ground, which is dry in the cold season and forms a watercourse in the rainy season. *Jess.*

হাউরা, *adj.*, having no owner, without proprietor (=الوارث). *Dac.*

হাউরা, *adj.*, half-witted, cracked.

হাওলা (Arab. حَوالة), *s.*, a tenure of land (*origin.* by which a man gets a tract of land to bring into cultivation). *E. Beng.*

হাওলাট, *s.*, a cattle-path. *Sylh.* Cp. হালট.

হাওলাত (Arab. حَوالات), *s.*, a loan of money without interest.

হাওলাদার, *s.*, the owner of a hāola. *E. Beng.*

হাঁকাহাঁকি (হাঁকিতে), *s.*, calling out, shouting.

† হাঁকিতে, *v.a.* (1) to drive, drive away; (2) to give a cry, give a shout.

হাঁজ (for † সাঁজ; *fr.* *সন্ধ্যা), *s.*, evening twilight, evening. *Gen.*

হাঁজনিয়া = হাঁজ. *Chit.*

হাঁজন্য, *adv.*, in the evening. *Chit.*

হাঁজা, *s.*, a rope for tethering cattle. *N. and C. Beng.*

হাঁজিনী = হাঁজ. *Chit.*

হাঁট খুড়া, *adj.* (a woman) who has neither husband nor children. *Mald.*

হাঁসলী, *s.*, a solid silver necklet with knobs at the ends.

হাঁসা = হাঁসলী. *Raj.*

হাকরাইতে, *v.a.*, to force open, make to open, separate (as an animal's mouth). *Jess.*

হাগিতে, *v.n.*, to purge, have profuse stools. *Raj.*

হাছড়া, *s.*, (1) a rake, *Chit.*; (2) a comb, *Chit.*

হাছড়াইতে (হাছড়া), *v.a.* (1) to rake, *Chit.*; (2) to comb, *Chit.*

হাজ়, *s.*, cloudiness in the sky. *Dac.*

হাজি, *s.*, a hemispherical basket for charcoal (used by wood-cutters). *Bak.*

*হাট, *s.*, a market that meets only on stated days, *Gen.* হাট মিলিতে to found or establish a hāṭ, *Jess.*

হাটরা (from হাট market?): হাটরা খুরাকী (also হাটরা টাটরা), expenses of feeding, etc., coolies.

হাটরিয়া (*হাট), *adj.* (a boat) used for going to hāṭ. *Dac.*

হাটি, *s.*, a ridge in a chili field. *Chit.*

হাটিতে, *v.n.*, to walk. *Gen.*, হাটি আইসা, *s.*, walking and coming; gait, walk. *Tip.* Haughton gives হাঁটিতে.

হাটু (Haughton হাঁটু), *s.*, the knee. হাটুর গিরা knee, knee-cap. *Dac.*

হাঠ (= সাঠ), *num.*, sixty. *E. Beng.*

হাড়িতে, *v.a.*, to uproot. *Chit.*

*হাত, *s.* (1) the hand.; (2) the arm from the elbow to the fingers.; (3) a cubit; *Gen.* হাতগুণি the hands, *Dac.* হাত শয়ন (*Raj*). হাতশাং (*Mald.*), *s.*, carrying in both arms, bearing upon both arms (cp. শূন্য করিয়া). হাতে ধরি দিতে, *Jess.* (1) to handcuff; (2) to bring one into criminal troubles.

হাত আইল, *s.*, an āil. *Dac.* Cp. হাতেলি.

হাতত (hātata; = সাতাতো), *adj.*, with ভাই a half-brother. *Chit.*

হাতা (*হাত?), *s.*, a cloth hand-bag. *Chit.*

হাতা, *s.*, ground around an English-built house, a compound. *Raj.*

হাতিয়া (*for* § সাতিয়া; cp. হাতত), *adj.*, of the half-blood, step-; e.g. হাতিয়া মেয়ে a daughter by one's wife's former husband. *Pub.* Cp. হাতুআ.

‡ হাতিয়ার (*হাত), *s.*, tools, implements.

হাতীনা, *s.*, a verandah. *C. and E. Beng.* Haughton gives হাতিনা.

হাতুআ (= হাতিয়া), *adj.*, of the half-blood, step-; হাতুআ পুত্র the son of a wife's former husband. *Raj.*

হাতুরিয়া (*fr.* হাত? cp. * হাতড়ী), *s.*, a tool. *How.*

হাতেলি (হাত আইল), *s.*, an āil. *Jess.*

হাদ্দ (*fr.* হদ্য), *adv.*, at the outside, at the most.

হানা (crp. খানা), *s.*, a drain.

হাপ (সাঁপ), *s.*, a snake. *Bak.*

হাপোর (Haughton † হাপর), *s.*, a seed-plot; nursery for seedlings. *Hug.*

হাপ্তা, *s.*, a ladder. *Chit.*

† হাবড়, *s.*, mud. *Jess.*

হাবলা, *adj.*, dull of understanding. 24-*Pargs.* Cp. হেউরা.

হাবিলী (Arab. حويلي), *s.*, a brick-house. *Dac.*

হামতমাম (Pers. هم + Arab. تمام) } *s.*, being joint in food and business, commensality
হামতাম (Pers. هم + Arab. طعام) } *Chit.*

হামরা : হামরা বরদার a lāṭhiyāl. *Jess.*

হামার, *s.*, depredation (by wild animals). *Bak.*

হামার = আমার, mine. *Mald.*

হামি = আমি, I. *Mald.*

হামী, *s.*, protesting, objecting, resisting. *Hug.*

হামু (Arabic خم coiled, folded ?); হামু দিতে, *v.n.*, to stoop, bend down. *Jess.*

* হাল, *s.* (1) a plough; e.g. হাল আবাদ *Bog.*; cultivation (of land); হাল গৃহস্থী *Tip.* the occupation of a cultivator, cultivation; হাল বাইতে *Tip.* and হাল চইতে *Chit.* to drive a plough, to plough; হাল মেলানির সময় *Chit.* the time of unyoking the plough, about 10 a.m.; নিজ হাল *Raj.* cultivation (of land) by the holder himself.: (2) a stern-oar used as a rudder. Cp. হাইল.

হালঘাটা. *s.*, the path leading into a bāṛi (?). *Sylh.*

হালট, *s.* (1) a cattle-track, *Jess.*; (2) a narrow path, foot-path, *Jess.* Cp. হাওলাট.

হালটি (*হাল), *s.*, the occupation of a ploughman.

হালি, *s.*, a plantain leaf. *Howr.*

হালিতে, *v.n.*, to decline, diminish; e.g. বেলা হালি গেল day-light had declined, it was past noon. *Chit.*

হালিয় (*হাল), *s.*, a servant who ploughs. *Jess.*

হালিশা (*হালি), *s.*, a rudder. *Chit.*

হালী (for শালী, fem. of শালা), *s.*, a wife's sister. *Chit.*

হালে হালে (Arab. حال), *adv.*, at short intervals; gradually, slowly.

হাল্যা (*হাল), *s.*, a ploughman, *Chit.* Cp. হালিয়: হাল্যাভাতি the ploughman's rice (-breakfast), about 10 a.m., *Chit.* Cp. হাল মেলানির সময়.

হাল্লা, *s.*, an uproar, row, disturbance.

হাশিয়াল, *s.*, a kitchen-house, kitchen. *Mald.*; *Raj.*

হাসা = হাঁসলী. *Dac.*

হাসিয়াল = হাশিয়াল. *Mald.*

হাস্থলী = হাঁসলী.

হিটমিট, *s.*, conversation, consultation, conference; advice. *Dac.*

হিয়ন
হিয়ানে } (Hind. यहां), *adv.*, in this place, here. *Chit.*

হিসাবানা (Arab. حساب), *s.*, a fee paid by a tenant to his landlord's amla when closing the yearly rent account (= তহরী). It is taken by the landlord himself if he has no amla.

হীন, *pron.*, that. *Chit.*

হুআঁরে, *prep.*, together with, with. *Chit.*

হুঁআলি, *s.*, the pin of a yoke. *Chit.*

হুঁকে (crp. সম্মুখে), *prep.*, in the presence of, before. *Bak.*

হুঁদী (crp. সম্বন্ধী ?), *s.*, wife's brother. *Bak.*

হুক, *s.*, difficulty of breathing, suffocation. *Mald.*

†হুজ্জতী (Arab. حُجّت), *s.*, altercation, dispute. *Bard.*

*হুড়্কা, *s.* (1) a wooden door-bar, 24-*Pargs.*; (2) a pin, bolt, *Dac.*

হুড়া, *s.*, vegetation growing on bīl or marshy land. *Jess.*

হুড়া, *s.*, thrust or poke (with the end of a stick). *Mald.*

হুদা, *adj.*, small, little; e.g. হুদা শ্রীপুর Srīpur the less. *Jess.*

†হুড়াহুড়ি (হুড়া), *s.* (1) struggling together, scuffle, affray; (2) tumult, clamour.

হুনিতে = শুনিতে. *Chit.*

হূঅর (crp. *শূকর), *s.*, boar, wild pig. *Bak.*

হূড়া = হুড়া, a thrust or poke. *Mald.*

হূর (= শোর), *s.*, a noise. *Chit.*

হে (for সে), *pronoun*, he, she, that. *E. Beng.*

হেআন (from সেখান), *adv.*, that place, there. *Chit.*

হেআনে, *adv.*, in that place, there. *E. Beng.*

হেউরা *adj.*, stupid, dull, doltish. 24-*Pargs.* Cp. হাবলা.

হেউলি, *s.*, a reed with a triagonal stem. *Khul.* Its proper name is মেলিয়া.

হেড়ে
হেণ্ডে } *adv.*, in that place, there. *Chit.*

হেত (heta; = সেত), *pronom.*, so much; e.g. হেত দূর so far, so much. *Bak.*

হেত্কন (*fr.* সে), *pronom.*, this; e.g. হেতকন সময়ে at this time. *Jess.*

হেতার (*fr.* সে) = তাহার. *Tip.*

হেতে (*fr.* সে), *pron*, he, she. *Chit.*

হেয়ান (*for* সেখান) *pron.*, that thing. *Chit.*

হেয়ান (he-yāna; for সেখানে), *adv.*, in that place, there. *Tip.*

হেরা (plur. of হে) *pron.*, they. *Chit.*

†হেরিতে, *v.a.*, to gaze at, see.

হেরে (*fr.* সে), *adv.*, in that place, there. *Jess.*

†হেলিতে, *v.n.*, to bend, become curved. *Bog.*

হেলুআ (হাল), *s.*, a ploughman. 24-*Pargs.* Cp. হালিয়.

হেলে, *s.* (1) a kind of snake, *Raj.*; (2) a kind of necklace, 24-*Pargs.*

হেলেহার (হেলে+হার), *s.*, a kind of necklace. *Raj.*

হেল্লা: হেল্লা দিতে, *v.n.*, to lean, lean back, rest against. *Raj.*

হৈর (haira), *s.*, mustard-plant. *Chit.*

হোথাৎ, *adv.*, lying on one's back, supine. *Chit.*
হোন্দি=কোন্দি. *Chit.*
হোরে, *s.*, casuarina tree. *Chit.*

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